

ALL ABOUT HISTORY

Alfred the Great
How the 9th-century king fought off marauding Viking invaders

NEW

**SHAKESPEARE
THE REBEL**

How England's famous bard fought the establishment

**NIXON'S
SCANDAL**

The intricate web of lies behind Watergate

10
DA VINCI
INVENTIONS

WAR OF THE ROSES

How madness and ambition led to England's real-life game of thrones

**Germany's
WWI victory**

What if the Kaiser had won the Great War?

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warriors**

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P1502B



Pupils at a school in England watch a laboratory demonstration in 1956 **Page 12**

Welcome

In May 1455, a relatively small battle erupted on English soil, but what it lacked in scale it more than made up for in importance. The battle - taking place at St Albans - signalled the start of the Wars of the Roses, a bloody conflict that would tear a nation apart over the next 30 years.

The civil war has stayed in the nation's consciousness partly due to Shakespeare's *Richard III* ("Now is the winter of our discontent") and also because it is a ripping good story - mad kings, ambitious queens, brutal battles and shifting allegiances. To read about this conflict turn to page 48.

We also feature the top ten inventions from that true Renaissance man, Leonardo da Vinci - turn to page 68 to find out about

his helicopter, machine gun, and much more. Seamlessly going from one genius to many others, our themed section on page 12 features scientific greats such as Newton and Archimedes. We have a new feature this issue, History Answers, that can be found on page 96. To find out who discovered America and what exactly Checkpoint Charlie was then check this out now.



AB

Andrew Brown
Editor

Issue 11 highlights

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What if?

What would have happened to the worldwide balance of power and subsequent history if Germany had triumphed in the Great War against Britain and its allies?

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"I'm not a crook"

The Watergate scandal ultimately led to the disgrace and resignation of US president Richard Nixon. Find out how Nixon's web of lies was woven and unravelled.

84



Rebel with a cause

William Shakespeare wrote his great works during a time of religious and political turmoil. Did these events lead to him inserting hidden messages into his works?

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Richard Nixon may have declared he wasn't a crook, but how criminal are the film's historical mistakes?

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DEFINING MOMENT

FOOTBALL'S DARKEST DAY

Liverpool fans are pulled from the terraces where they were being crushed during the FA Cup semifinal match between Liverpool and Nottingham Forest at Hillsborough Stadium, Sheffield. The crush led to the death of 96 people and the Taylor Report, which recommended all-seater stadiums and found the police to be largely responsible for the tragedy.

15 April 1989





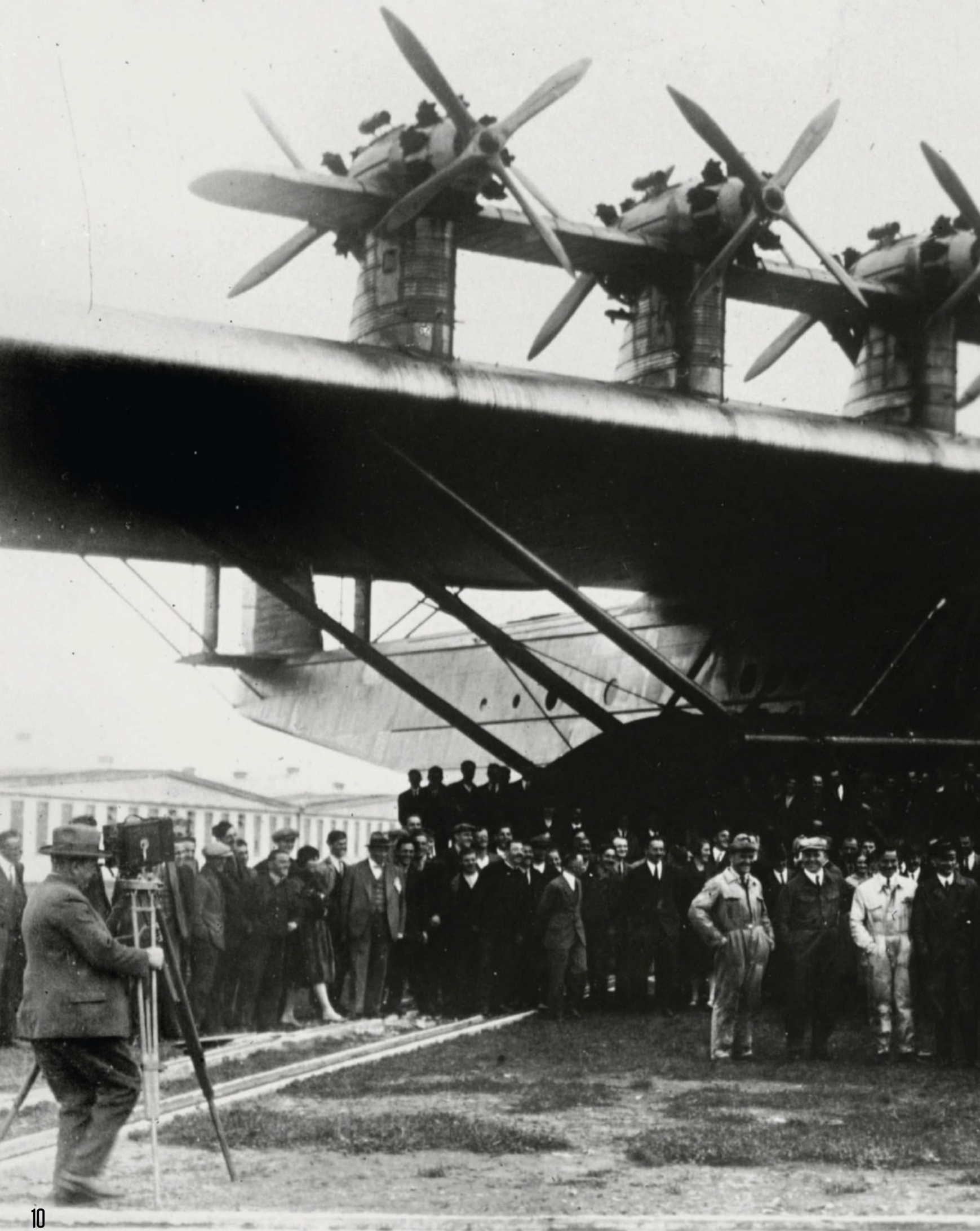
DEFINING MOMENT

THE KING OF ROCK TAKES AIM

American music idol Elvis Presley holds an artillery gun during his national service with the US Army. The singer had been drafted into the Army in March 1958 and turned down the chance to enlist in the Special Services and entertain the armed forces, opting to serve in the Regular Army. This earned him a new fanbase from many who had previously been appalled by his rock and roll image.

1958-1960







DEFINING MOMENT

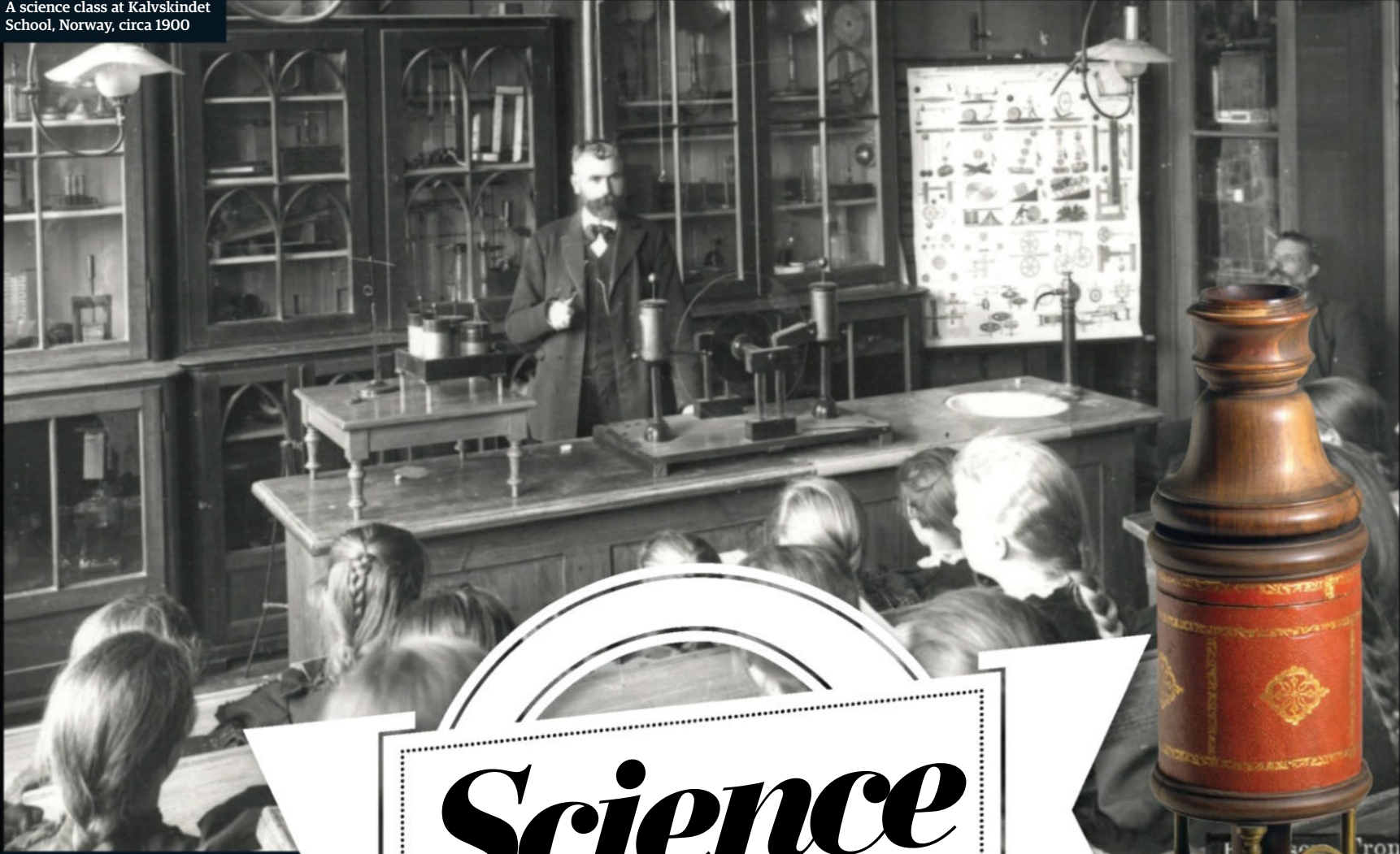
THE HEAVIEST PLANE ON EARTH

Passengers and crew pose for a picture before boarding the German seaplane Dornier DO X on the day it carried 169 passengers above Lake Constance on the Rhine. The plane had only been completed in June of that year and was the heaviest plane in the world, weighing 53 tons.

Production ceased in the mid-Thirties after a series of accidents.

21 October 1929

A science class at Kalvskindet School, Norway, circa 1900



Plato and Aristotle are two of the world's most influential philosophers and scientists



Splitting the atom led to the 1945 nuclear bomb known as 'Fat Man'

Science

12 PAGES OF INVENTION,
INGENUITY AND
EXPERIMENTATION

Science The systematic study of the nature and behaviour of the physical world, especially by observing, measuring and performing experiments

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Ten influential scientists who changed the world for the better

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From the earliest and basic experiments to complicated modern-day scientific wonders

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Split an atom and produce nuclear energy to power industries

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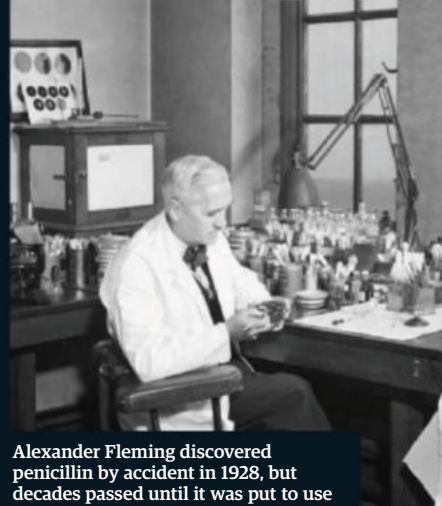
Newton and the light spectrum

26 Top 5 facts

Archimedes, the genius Greek mathematician and inventor

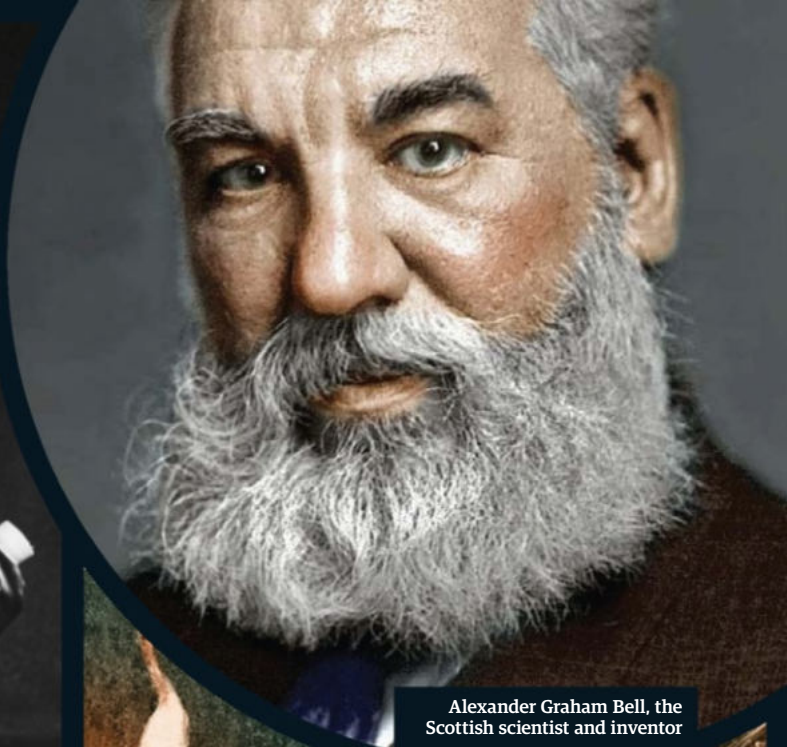


An early Culpeper-type microscope, ca 1725

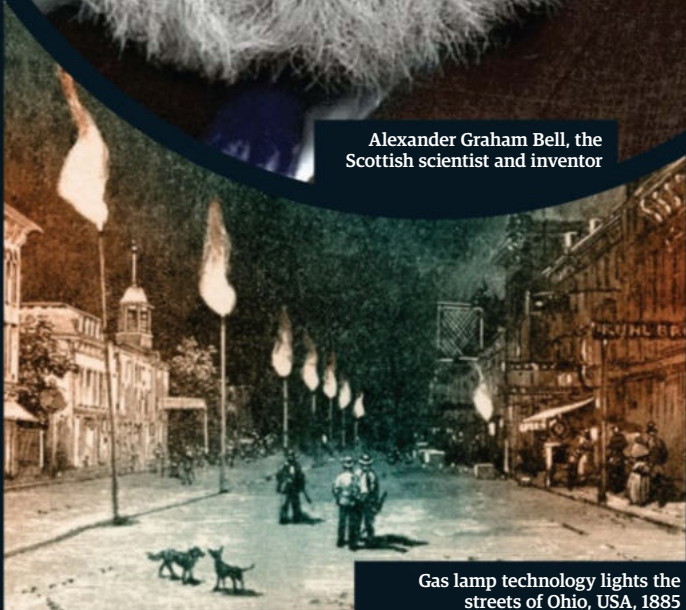


Alexander Fleming discovered penicillin by accident in 1928, but decades passed until it was put to use

A laboratory technician carries out a test to compare Teflon with another plastic, 1940

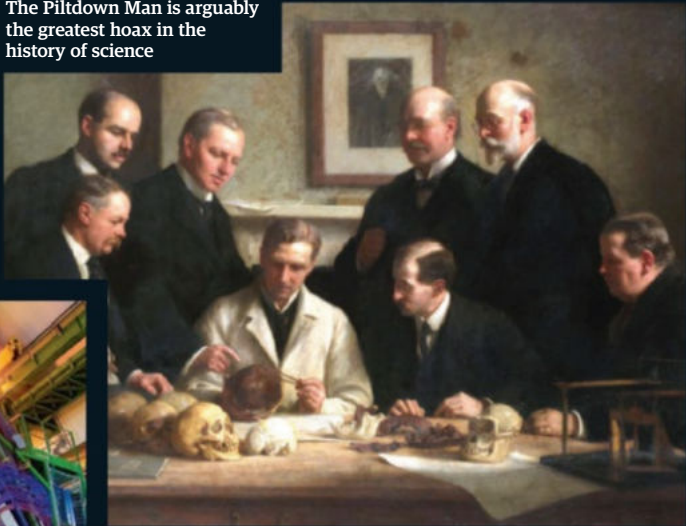


Alexander Graham Bell, the Scottish scientist and inventor



Gas lamp technology lights the streets of Ohio, USA, 1885

The Piltdown Man is arguably the greatest hoax in the history of science



Painting of the Dutch surgeon Dr Nicolaes Tulp giving an anatomy lesson

The Large Hadron Collider in Switzerland, the world's most powerful particle accelerator



Some scientists used to believe head measurements indicated intelligence



© Alamy, Look and Learn, Getty, SPL, Corbis

Hall of fame

10 INFLUENTIAL SCIENTISTS

Meet ten scientists who changed the world for the better

MARIE CURIE

POLISH 1867-1934

A physicist, chemist and a rare two-time Nobel Prize winner. Her work was instrumental in the development of X-rays and she was head of the radiological department for the Red Cross.



Ernest Rutherford

BRITISH 1871-1937

Rutherford was one of the 20th century's greatest scientists and is known as the father of nuclear physics. He was one of the creators of modern atomic physics and was awarded the Nobel Prize in Chemistry in 1908 for his studies of atoms and radioactivity, which led to him developing his model of atom's appearance and discovering one of their components, the proton. Without him, all subsequent work on atoms and nuclear power would have been impossible.

James Watson

AMERICAN 1928-

Watson and his colleague Francis Crick, an important theoretical molecular biologist, were awarded the 1962 Nobel Prize in Medicine for their groundbreaking find; the discovery of the double helix structure Deoxyribonucleic acid (DNA) one of the most significant discoveries of the 20th century. Finding themselves working together at King's College, London, the duo published their work in April 1953, which served to explain how DNA fits what we know of its function today - that it's encoded with the genetic instructions enabling the development and functioning of all living organisms and viruses.

Alan Turing

BRITISH 1912-1954

Without Turing it is doubtful humanity would have come as far as we have with computing and artificial intelligence. Considered to be the father of computing, his Turing machine forms the basis for our current understanding of the machine we recognise as the computer. Highly intelligent and known to be a rather eccentric figure at the Government Code and Cypher School at Britain's code-breaking centre, Bletchley Park - where he worked during World War II - Turing also played a vital role in designing the bombe; a machine that was capable of successfully decoding German military messages.



Turing has a test named after him, which measures a machine's ability to exhibit intelligent behaviour



A precocious student, James Watson entered the University of Chicago at only 15, receiving his degree in Zoology four years later

NICOLAUS COPERNICUS

POLISH 1473-1543

Think of a time when most people believed the Earth was stationary in the middle of the universe and you'll find yourself in the time of Nicolaus Copernicus. The astronomer was quick to challenge this theory and reasoned that - when it came to the motions of the planets in our Solar System - the Sun was at the centre. By saying so he angered the powerful Catholic Church and ran the risk of being executed, but spurred the Copernican Revolution, a major event in the history of science and one that questioned our very place in the universe.



Copernicus presented the revolutionary idea that the Earth orbited the Sun, not the other way around



Newton developed the law of gravity

ISAAC NEWTON

BRITISH 1642-1727

A principal figure in 17th and early-18th-century science, Isaac Newton developed the law of gravity (the famous story of an apple falling on his head probably wasn't true though) and the resulting laws of motion, showing how gravity could account for the orbits of the planets. He also designed the reflecting telescope, developed calculus and discussed the nature of light and colour. His reputation may have been of a man who could be rude and difficult to work with but science is grateful for his endeavours.

Edward Jenner

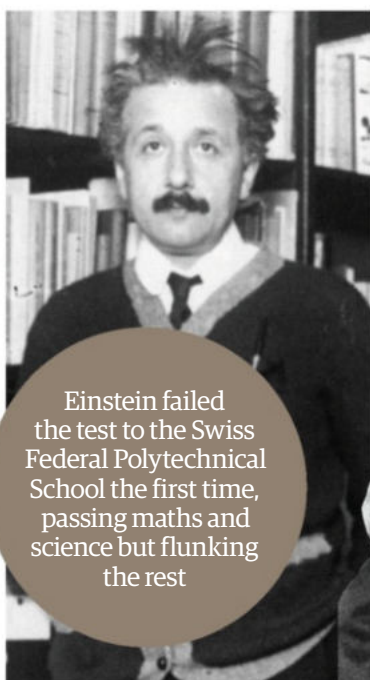
BRITISH 1749-1823

We have all benefited from the work of Edward Jenner in one way or another, who developed the science behind vaccines. He was able to treat the killer disease smallpox by inoculating people against it using cowpox, the lesser form of the disease, after noticing that milkmaids who caught cowpox never seemed to contract smallpox. Jenner experimented on several children, including his own, to perfect the treatment, and today vaccines have saved millions of lives while smallpox has been all but eradicated.



Edward Jenner was widely ridiculed for his work - critics claimed it was ungodly to inoculate someone with bacteria from a diseased animal

"A man should look for what is, and not for what he thinks should be" **Albert Einstein**



Einstein failed the test to the Swiss Federal Polytechnical School the first time, passing maths and science but flunking the rest

Albert Einstein

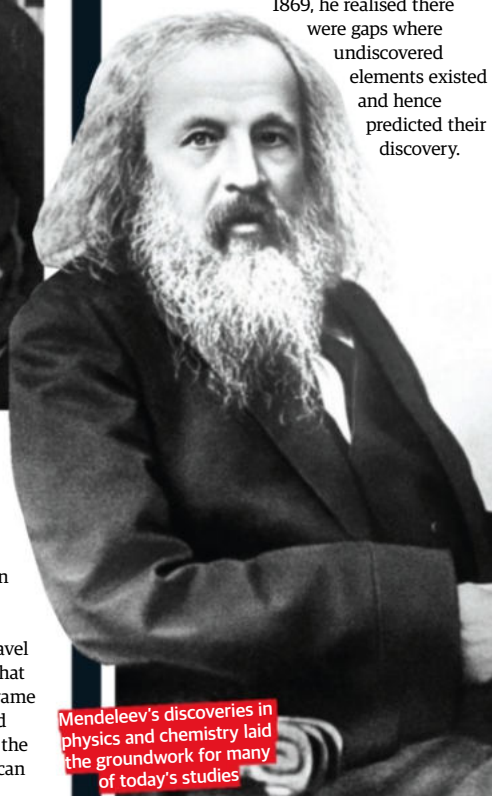
GERMAN 1879-1955

Einstein has become a cultural icon for his trailblazing work, but while he won the Nobel Prize in 1921 for his work on the photoelectric effect he is best known for his Special and General theories of relativity. The former was published in 1905 and described how nothing can travel faster than the speed of light and how that speed is independent of an observer's frame of reference. The General theory showed how energy and mass are equivalent in the famous equation $E=mc^2$ and how mass can bend space.

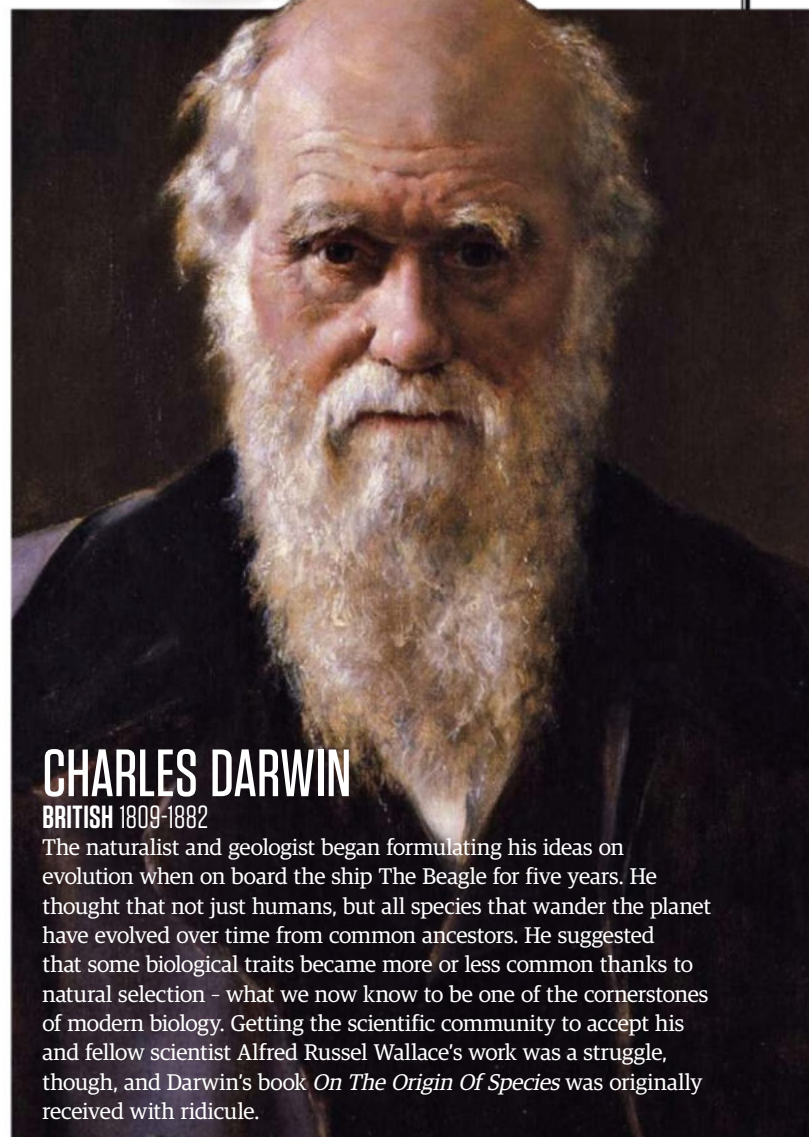
Dmitri Mendeleev

RUSSIAN 1834-1907

All of modern-day chemistry has its basis in the work of Dmitri Mendeleev, who created the Periodic Table of Elements, a way of classifying and ordering the elements according to their atomic weight and chemical properties, showing that the most common elements, like hydrogen, had the smallest atomic weight. When he created the table in 1869, he realised there were gaps where undiscovered elements existed and hence predicted their discovery.



Mendeleev's discoveries in physics and chemistry laid the groundwork for many of today's studies



CHARLES DARWIN

BRITISH 1809-1882

The naturalist and geologist began formulating his ideas on evolution when on board the ship *The Beagle* for five years. He thought that not just humans, but all species that wander the planet have evolved over time from common ancestors. He suggested that some biological traits became more or less common thanks to natural selection - what we now know to be one of the cornerstones of modern biology. Getting the scientific community to accept his and fellow scientist Alfred Russel Wallace's work was a struggle, though, and Darwin's book *On The Origin Of Species* was originally received with ridicule.

Who did we miss out?

Let us know [f](#) /AllAboutHistory [t](#) @AboutHistoryMag

Science across history

THE ORIGINAL MEDICAL DATABASE

PERSIA 1025

Not only did Persian polymath Avicenna write one of the largest and most comprehensive medical text books ever written, which his *The Canon Of Medicine* consisting of five works that laid out Galenic medicine in its most advanced form, but he also went on to write scientific treatises on over 450 subjects including philosophy, astronomy, mathematics and physics. Amazingly, despite Avicenna writing in the 11th century CE, over 240 of his scientific treatises survive to this day.



Avicenna's full name was Abū Alī al-usayn ibn Abd Allāh ibn Al-Hasan ibn Ali ibn Sīnā

The simplest explanation is the best

ENGLAND 1320

The scientific principle Occam's razor, as formulated by William of Ockham, an English Franciscan friar and scholar, states that among competing hypotheses the simplest and one with fewest assumptions should be selected. Today, Occam's razor is typically used as a heuristic to guide scientists in their work.



Ockham was influenced by scientists as far back as Aristotle

Galileo Galilei revolutionised astronomy

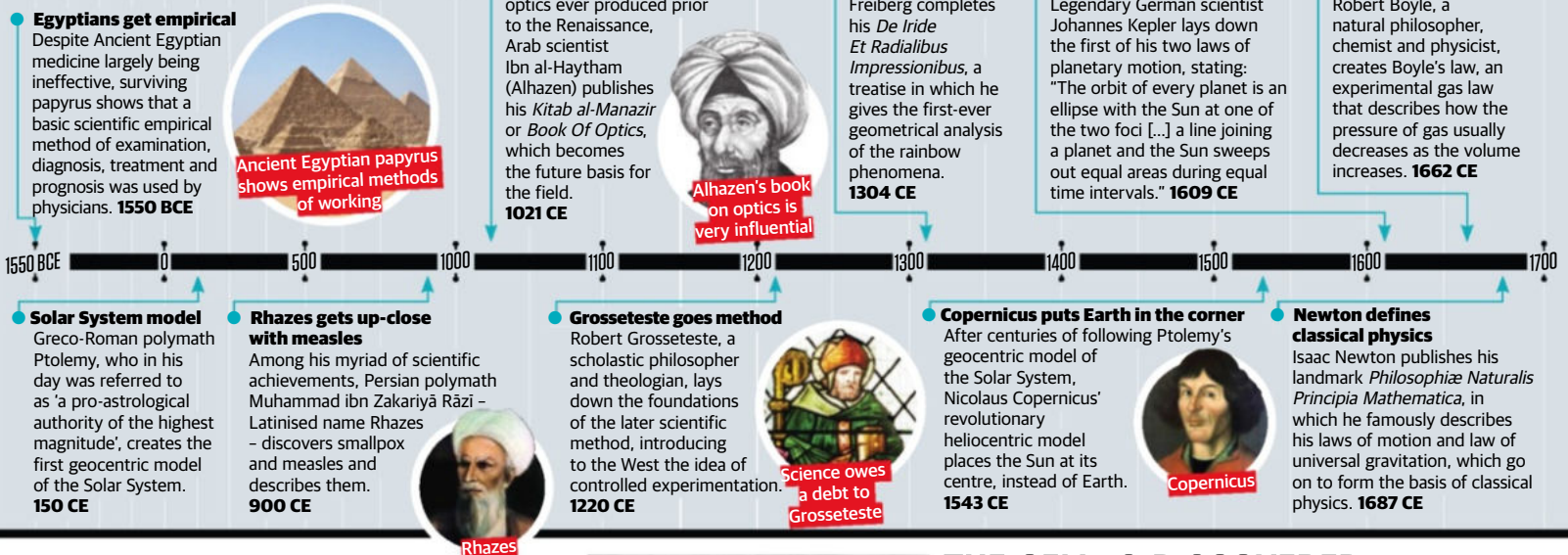


STARGAZING

ITALY 1610

Galileo Galilei's *Sidereus Nuncius* treatise of 1610 was the first-ever scientific work based on observations made through a telescope, containing such highlights as early observations of the Moon's topography and various stars and planets. Its publication helped popularise astronomy, while the treatise itself became incredibly valuable, with the original edition now worth £180,000 (\$276,000).

Science timeline



The first peer review

ENGLAND 1665

Of all of history's scientific developments, perhaps the most important was the simple publication of a journal in the mid-17th century. The Royal Society of London, the first establishment in the world dedicated to science, had been founded in England in November 1660 after being granted a Royal Charter by King Charles II. Its dedication to 'natural philosophy' soon became well known and, five years after its establishment, its then-secretary Henry Oldenburg decided that its members' research and discoveries should be published in a journal, which he paid for out of his own pocket. This journal was the *Philosophical Transactions Of The Royal Society* and was groundbreaking - it was the first peer-reviewed scientific journal in the world. This one journal helped establish the peer-review system that any serious scientific journal today utilises and helped disseminate the amazing power of science to a wider audience. Amazingly, the journal is still in publication today.

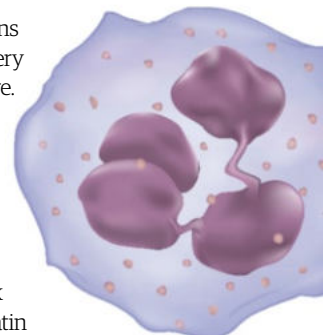


Michael Faraday lecturing at the Royal Society

THE CELL IS DISCOVERED

ENGLAND 1665

Today, cellular science has helped humans understand their bodies and those of every other organism on Earth like never before. However, prior to English scientist Robert Hooke's discovery of the cell in 1665, they were an entirely unknown aspect of biology. Hooke discovered cells while studying cork and then later in living plant tissues. The scientist even coined the word 'cell' himself in his book *Micrographia*, which he took from the Latin 'cella', which translates as 'small room.'



Extinction is made fact

FRANCE 1796

French naturalist and zoologist Georges Cuvier was one of the best-known and celebrated scientists of his time and, thanks to his work, he helped found the field of vertebrate palaeontology and established that the process of extinction was a fact. His most famous work was a book entitled *The Animal Kingdom*, published in Paris in 1817.



Georges Cuvier's name is among the 72 inscribed on the Eiffel Tower

EVOLUTION EVOLVES

ENGLAND 1859

155 years after its monumental discovery by Charles Darwin, despite fanatical opposition by sectarian groups, evolution remains one of the greatest scientific revelations of all time. He theorised that all species on Earth are descended from one common ancestor, and that any species' survival is driven by the process of natural selection, challenging the previously dominant creationist view. After *On The Origin Of Species* was published a more evidence-based theory was revealed.



Charles Darwin formed modern understanding of evolution

Franklin kite legend

Benjamin Franklin proves that lightning is electrical by allegedly (but most probably not actually) flying a kite in a storm. He later invents the lightning rod. 1751 CE



Benjamin Franklin, scientist and American founding father

Faraday discovers electromagnetic induction

Along with his discoveries of electrolysis and diamagnetism, English experimental scientist Michael Faraday discovers electromagnetic induction and demonstrates it by wrapping two wires around opposite sides on an iron torus ring. 1831 CE

Planck radiates brilliance

Max Planck, a German theoretical physicist, creates his theory on black body radiation. His studies help to form the basis of quantum theory. 1900 CE



Max Planck studied radiation

Feynman makes a quantum leap

Legendary American physicist Richard Feynman advances the field of quantum electrodynamics and, as a consequence, quantum field theory. 1948 CE



Richard Feynman

Mapping the human genome

The Human Genome Project, an international scientific research project set up to determine the sequence of chemical base pairs that make up human DNA, completes its first draft of the human genome. 2001 CE

Smallpox is defeated

Thanks to the pioneering work of English physician Edward Jenner, in which he identifies the similarities between cowpox and smallpox, a vaccine is developed to stop the deadly latter. 1796 CE



Edward Jenner

An idea germinates for Louis

French chemist and microbiologist Louis Pasteur formulates his germ theory of disease, which states that some diseases are caused by microorganisms invisible to the naked eye. 1861 CE

The Milky Way is not the only galaxy

American astronomer Edwin Hubble discovers that our own galaxy, the Milky Way, is just one of many such galaxies, establishing the field of extragalactic astronomy. 1924 CE



Our understanding of the cosmos is constantly expanding

Dolly is cloned

The first mammal to be cloned from an adult somatic cell using the process of nuclear transfer is completed at the Roslin Institute at the University of Edinburgh, creating the now-famous sheep Dolly. 1997 CE

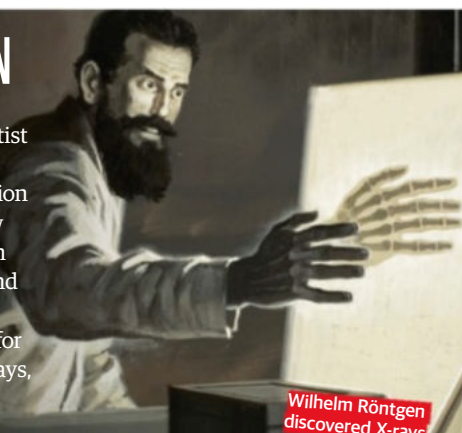
99.999 per cent certain

The Higgs boson – a particle initially theorised in 1964 that is responsible for creating the Higgs field, something pivotal to the Standard Model of particle physics – is discovered with a certainty of 99.999 per cent. 2012 CE

THE ORIGINAL X-MAN

GERMANY 1895

On 8 November 1895, German scientist Wilhelm Conrad Röntgen produced and detected electromagnetic radiation in a wavelength that today we know as X-rays. The achievement won him the Nobel Prize in Physics in 1901 and today he is considered the father of diagnostic radiology. Unfortunately for Röntgen, his original name for the rays, 'Röntgen rays', never caught on.

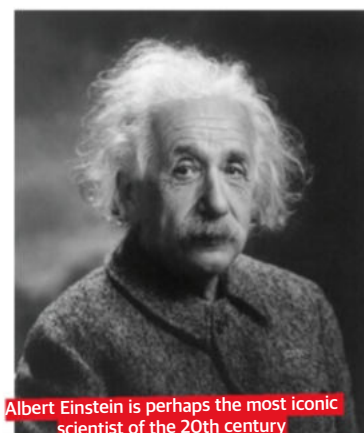


Wilhelm Röntgen discovered X-rays

Einstein has a special year

SWITZERLAND 1905

Albert Einstein published not one but four groundbreaking papers in the scientific journal *Annalen Der Physik* in 1905. These four articles would form the basis of modern physics, changing human understanding of space, time, mass and energy forever. Famously, Einstein wrote the four papers while working as an examiner at the Patent Office in Bern, Switzerland, where he sounded out his pioneering theories on his co-worker and close friend Michele Besso.



Albert Einstein is perhaps the most iconic scientist of the 20th century

How to SPLIT AN ATOM

INSIDE ONE OF THE MOST
IMPORTANT SCIENTIFIC DISCOVERIES
OF ALL TIME, 20TH CENTURY

Although a seemingly innocuous act in and of itself, splitting the atom proved to have immense consequences for humanity, both positive and negative. While providing a vital source of energy, it also led to the construction of one of the greatest and most feared weapons in history. This atomic weapon is so powerful that the world has lived under its spectre for decades. Read on to discover the process behind the splitting of the atom in what was one of history's defining scientific moments.

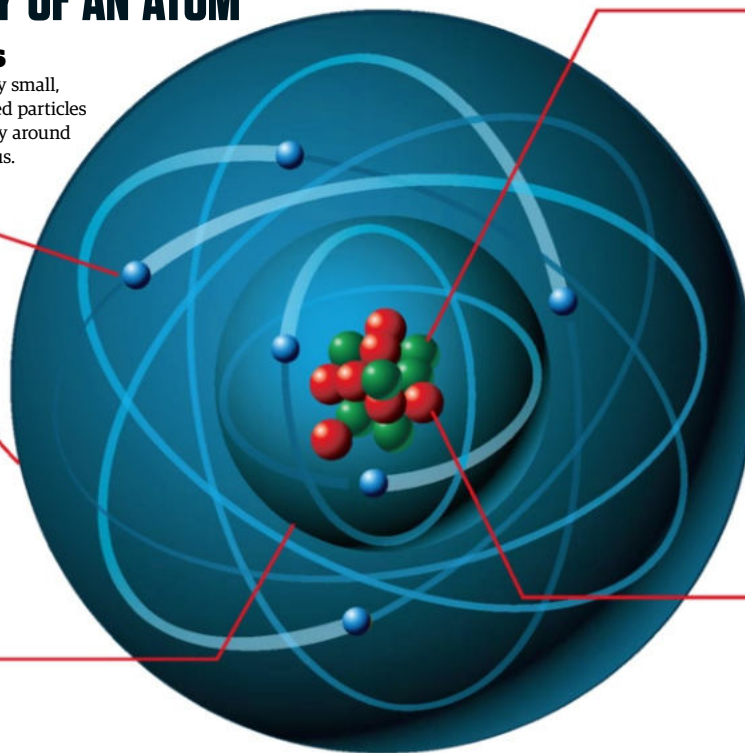
ANATOMY OF AN ATOM

Electrons

Electrons are very small, negatively charged particles that move quickly around the atom's nucleus.

Neutrons

Neutrons - particles with no electrical charge - help give atoms their mass. They are slightly bigger than protons.



Shells

Electrons can only exist in set energy levels, commonly called shells. Each shell has openings for a limited number of electrons.

The nucleus

The centre of the atom, and almost all of its mass, is the nucleus. The nucleus is made up of protons and neutrons.

Protons

Protons are positively charged particles in the nucleus. All elements are defined by how many protons they have.

4 KEY PLAYERS

ERNEST RUTHERFORD

1871-1937, BRIGHTWATER, NEW ZEALAND



The man credited with first splitting the atom in 1917, his discoveries led to the development of nuclear power.

SIR JOHN DOUGLAS COCKCROFT

1897-1967, TODMORDEN, UK



Along with physicist Ernest Walton, he was awarded a Nobel Prize for splitting lithium atoms into helium nuclei.

ENRICO FERMI

1901-1954, ROME, ITALY



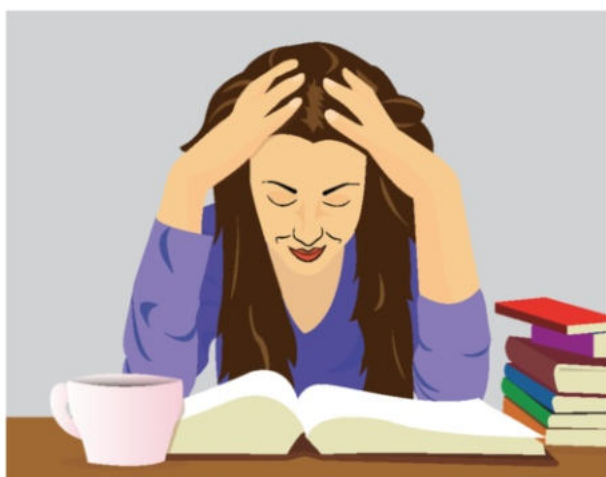
In 1934, Fermi achieved nuclear fission. He was dubbed one of the 'fathers of the atomic bomb.'

ALBERT EINSTEIN

1879-1955, ULM, GERMANY

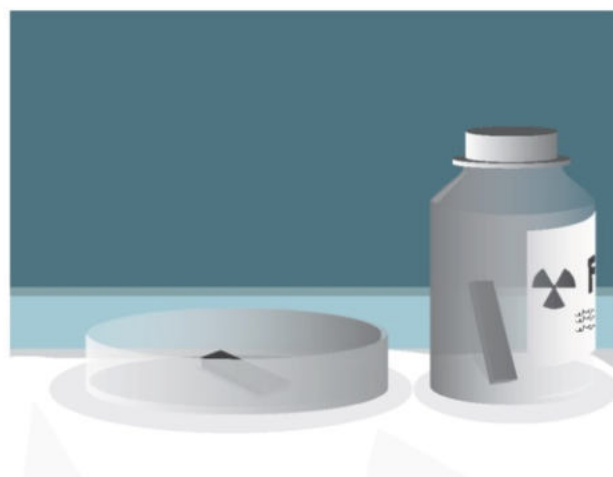


His theory of relativity provided the basis for the construction of the atom bomb - which he resented.



01 Get educated

Let's not beat around the bush: it's not going to be easy. Ernest Rutherford is credited as the first man to split the atom way back in 1917 and while the equipment has moved on leaps and bounds since, he is considered one the greatest scientists ever. Top-level equipment is available but you need to know how to operate it - you'll need to do some serious studying.



02 Find enough fissionable material

Splitting an atom requires large amounts of energy, which you can start to produce by finding enough fissionable material. Most elements above iron in the periodic table could be considered candidates, the best of which should be 'fissile' (capable of sustaining a reaction). Uranium-235 and plutonium-239 are particularly good examples.

How not to split an atom

In August 2011, a Swedish man was arrested after making an ill-advised attempt at conducting the experiment required to split the atom - in his own home. According to the 31-year-old Richard Handl, he acquired the radioactive elements of radium, americium and uranium and spent months trying to construct a nuclear reactor, at one point even causing a small meltdown on his kitchen stove. "I have always been interested by physics and chemistry", he said, before adding that he just wanted to "see if it's possible to split atoms at home." He was later acquitted of two of the three charges, although at the time of writing he could still be prosecuted for crimes against the radiation safety law.



5 TYPES OF... ATOM-AGE MILESTONES

FIRST ATOM SPLIT

1917

Achieved by physicist Ernest Rutherford, who uses nitrogen and alpha particles for his experiment, it also leads to the discovery and subsequent naming of the proton particle.

NUCLEAR FISSION OF HEAVY ELEMENTS DISCOVERED

1938

Chemist Otto Hahn and his assistant Fritz Strassman discover how to conduct the nuclear fission of heavy elements (those after iron in the periodic table).

NUCLEAR FISSION THEORETICALLY EXPLAINED

1939

Lise Meitner and her assistant Otto Robert Frisch theoretically explain the process of the fission of heavy elements, bringing the practical application of fission one step closer to reality.

FIRST NUCLEAR REACTOR BUILT

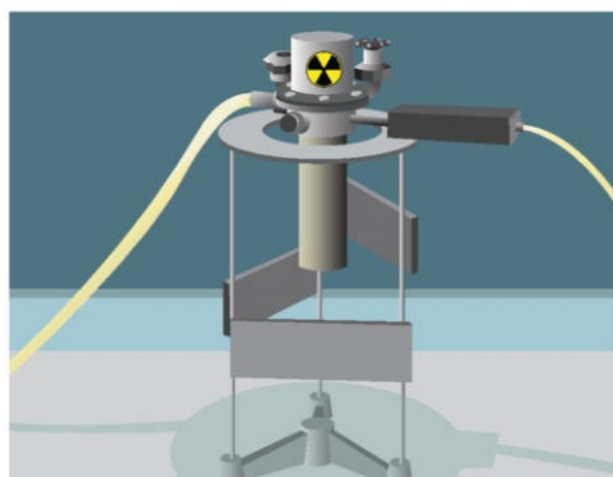
1942

Chicago Pile-1, the world's first nuclear reactor proper, is constructed as part of the now-infamous Manhattan Project, led by Robert Oppenheimer.

HIROSHIMA AND NAGASAKI BOMBED

1945

The horrific culmination of the discoveries brought forward by splitting an atom. Tens of thousands are killed by the Hiroshima and Nagasaki bombs.



03 Enrich the fissionable material

After you've chosen which material to use, it needs to be augmented so the ratio of highly radioactive isotopes to less radioactive ones is increased. This is because as radioactivity increases, so too does the neutron-to-proton ratio. As reactions occur thanks to neutrons colliding with other nuclei, it increases the chance of a reaction taking place.

04 Stay safe!

As large amounts of alpha, beta and gamma radiation will be emitted both during the reaction and by the material itself, take steps to make sure you're working in a protected environment. To do this, surround the area of the experiment with several feet of concrete or a similar material to absorb the radiation.



05 Commence the experiment

First, fire a beam of neutrons at the fissionable material. Once they come into contact with an atom its nucleus will divide into two, and you will have successfully achieved your aim of splitting an atom. The heat generated from this reaction (and the released neutrons colliding with other nuclei) can be used in nuclear stations to produce power.

06 Put it to practical use

Now that you have split the atom and helped the advancement of science, you can repeat and expand the process into the size of an entire nuclear plant, so you can store energy and provide electricity to society through your country's existing power grid. Nuclear energy is one way to support humanity's constantly growing need for energy.

DARK CLOTHES

STAYING UNDETECTED WAS VITAL

Like any practice that required moving as quietly and comfortably as possible, lightweight and well-fitting clothes were essential, with dark clothes preferable. Body snatchers traditionally plied their creepy trade under cover of darkness and digging up several bodies in a single evening could take hours. Blending into the night could help them stay undetected - what they were doing may have helped advance medical science but was still illegal.

PICKLING JARS

FOR THE BITS AND PIECES

The grim details of a body snatcher's inventory would make many 19th-century folk turn a shade of green and the profession had a poor reputation - not surprising when some would actually kill just to receive coin from those seeking to learn more about human anatomy and biology. When the whole body couldn't be moved or some of it was too far gone, body parts would be pickled in jars and sold at a later time.

LONG ROPE

ENOUGH TO HANG YOURSELF WITH

As the techniques for gravedigging became more sophisticated, the body snatcher began to require more tools in his arsenal. One method reduced the amount of digging required and involved cutting a section of turf out from the head of the grave, then digging down to the coffin and cutting the top off. The rope was then tied around the corpse's neck and it was unceremoniously dragged out of the hole.

STURDY SHOVEL

A RELIABLE TOOL FOR DIRTY WORK

If a six-month jail sentence was an occupational hazard for the body snatcher, then digging six feet of earth out of a grave to reach the coffin was their daily grind. A good shovel would make lighter work of it but the clever body snatcher didn't necessarily even have to break a sweat to procure a corpse. Grease the right palms at the poorhouse and not only could they find out exactly who had died plus the wheres and whens of their grave, but the recently deceased might even get lost on the way to their final resting place...

PICKAXE

FOR PARTICULARLY TOUGH ENCOUNTERS

Alongside the shovel, the pickaxe naturally complemented the hard graft of the body snatcher's work. It was a way of getting through hard-packed soil, levering rocks and ultimately, a tool for prying the lid off a coffin. As society became wise to the way of the resurrectionists, concrete slabs were lain on coffins and mortsafes - iron cages - around them, to protect the contents from pick and shovel.



A BODY SNATCHER

THIEF OF CORPSES FOR
THE MEDICAL PROFESSION
19TH CENTURY, UK

CLOTH SACK

TO HOLD IT ALL TOGETHER

The condition the body snatcher would find the corpses in varied. If they had pulled the right strings then it had been freshly interred that very day or even better, come straight from the deadhouse. Otherwise, if decay had set into the body, it would be placed in a bag, piece by gruesome piece. For the anatomists and biologists, a ripe corpse was workable but one too decayed was worthless.

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Day in the life

ALCHEMIST

EXPERIMENTING WITH DIFFERENT CHEMICAL SUBSTANCES AND SEEKING THE MEANING OF LIFE, EUROPE, 17TH CENTURY

Alchemists were the magicians of their generation. Through their experiments with chemistry and the study of the properties of various materials, they sought to discover the secrets of the material world. This was geared towards mass-producing valuable metals like gold, but the ultimate goal of many alchemists was to create the fabled Philosopher's Stone, through which its beneficiary could obtain the elixir of youth, and with it immortality. This profession was often a dangerous one for those concerned, with many budding alchemists being tortured and even killed for its practice. Discover more about the daily life of these practitioners...

ARRANGING LABORATORY

In a field of work that was often concerned with attaining the power of higher beings, it is not surprising that many alchemists were very superstitious people. With some of them, this manifested itself in an interest in various branches of astrology, with their laboratories often being laid out as if they were in a temple, based on specific cosmic convergences.

SETTING UP EQUIPMENT

With alchemists' work involving a wide variety of tasks by its very nature, a lot of equipment was required. In a typical laboratory, a furnace and vessels were needed, along with items like a gridiron, iron rod, shovel, mortar and an iron plate, in addition to various dishes, funnels, crucibles and receptacles.

STUDYING PROPERTIES OF MATERIALS

In order to stay abreast of their ever-changing subject matter, alchemists were frequently studying and learning. As well as perusing texts related to their work, they experimented on and analysed various materials in an attempt to discover the secrets that could lead to them manipulating certain substances that would enable them to make a scientific breakthrough.

How do we know this?

In addition to a number of sources taken from *The Alchemy Website*, the book *Transforming Matter: A History Of Chemistry From Alchemy To The Buckyball* proved to be of great use, going into detail about the various aspects of the daily life of alchemists and some of its most noteworthy practitioners, such as Robert Boyle and Isaac Newton. The text also touches upon their views and how they were influenced by the likes of Aristotle and Paracelsus.



An alchemist filling drug jars



"Alchemists often became absorbed in their work [...] unable to tear themselves away"

RECORDING THEIR WORK

By way of keeping track of their work, alchemists generally recorded their findings in writing, albeit doing so using their own formulas and code. This method both allowed them to record their experiments and keep their discoveries secret from prying eyes. This code would lay the basis for the chemical formulae used in chemistry today.

FINANCING WORK

In order to obtain the money that enabled them to buy the equipment and work space needed for their work, many budding alchemists had their own patrons. These would either be wealthy friends acting as benefactors, or opportunists looking for a share of the spoils. They would also offer protection, as during the 17th century the practice of alchemy was illegal.

CONDUCTING EXPERIMENTS

The primary aim of alchemists was to turn base metals into precious substances like gold by heating them up along with various other types of powder or minerals. A whole lot of trial and error was involved in this exercise, with alchemists testing out several different formulas in their endeavours. Although various alchemists claimed to have discovered various secrets - such as making gold out of other substances - to this date, no proof exists to back this up.



Robert Boyle, one of the world's most famous alchemists

PHILOSOPHICAL STUDY

For many alchemists - Robert Boyle being one particularly noteworthy example - the study of subjects like philosophy went hand in hand with their work, and as such they studied this subject. Moreover, Boyle's work in alchemy influenced the study of chemistry and he is often referred to as the father of modern chemistry.

SLEEPING IN SAME BUILDING

Alchemists often became absorbed in their work, so it wasn't uncommon for them to work through the night, unable to tear themselves away should they somehow miss the secret to a truly earth-shattering discovery. If they finished at a reasonable time, they would often sleep in a room near or next to the lab - often in the same building.



DEVELOPMENT OF OPTICS

SHINING A NEW LIGHT ON COLOUR, ENGLAND, 1672

Mankind has speculated about vision and light since antiquity with some of the earliest theories being put forward by Greek philosophers. Plato thought that the eye emitted particles that made objects visible, Pythagoras speculated that objects projected light particles into the eye and Aristotle believed that particles moved through waves from the objects to the eye. It was not until the 17th century and the work of the English scientist Isaac Newton that light was finally cast on its true physical properties.

From a young age, Newton had displayed an excellent academic mind and attended the University of Cambridge at 19 years old. While studying he was influenced by the writings of Galileo and Copernicus, so he began developing his own theories on mathematics and on the nature and properties of light. By 1666, he began to study optics on his own and subsequently develop theories around the composition of white light and the spectrum of colours. By using a prism he refracted white light which showed its constituent colours of red, orange, yellow, green, blue, indigo and violet. This showed that 'pure' light, white light, was anything but colourless.

As a result of his experiments the scientist developed his theory of colour, which claimed that objects appear certain colours because they absorb and reflect different amounts of light. Newton was to maintain that colour was determined solely by light, an opinion that created much controversy and disagreement during his lifetime.

03 White screen

A seven-colour spectrum is reflected on the surface: Red, orange, yellow, green, blue, indigo and violet.

05 Experiment

Newton isolated each of the colours by making small holes on the screen for them to pass through.

ISAAC NEWTON

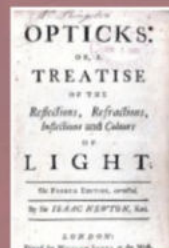
English 1643-1727

Brief Bio

Born to a prosperous farmer, who died three months after he was born, Newton was brought up by his grandparents and attended Cambridge University in 1661. While there he became heavily interested in - among other things - mathematics, optics and physics. He is best known for his work with optics and light and for publishing his theory on gravity. As befitting a man of his stature, he is buried in Westminster Abbey.

How do we know this?

There are a host of books about Newton, both the man and the scientist, that shed light on the optics experiment but - for those with a scientific mind - his original source material proves to be illuminating. Newton's *Opticks* was first published in 1704 and is largely a record of experiments and the deductions made from them. In this book he sets out his experiments and his theories on the nature of light. The text is considered one of the great works of science.



Newton's *Opticks* was translated to Latin in 1706

04 Telescope

As part of his studies on the nature of light, Newton also invented a new kind of reflector telescope.

01 Light sources

Natural light entered through a small hole in the window of the room where Newton had set up his laboratory.

02 Prism

Bought at a fair, the triangular structure of crystal splits white light into a band of colours.

08 Isaac Newton

Born in 1643, the Englishman was one of the world's greatest scientists. He is best known for his theories on gravity and by the time of his death in 1727 his genius had been acknowledged in his own time.

06 Waving energy

Max Planck, Niels Bohr and Albert Einstein later confirmed that light has dual properties: it spreads like a wave but also like particles or energy 'quanta'.

07 Documents

Newton personally drew all the details of his experiment in a diagram and through writings. These would later form the basis of one of his most famous books.

A BRIEF HISTORY OF LIGHT

LIGHT PARTICLES

Albert Einstein discovers that light can be treated in certain aspects as particles. It was because of this - not because of the theory of relativity - that Einstein was awarded the Nobel Prize in 1921.

1905

POWERFUL MICROSCOPE

Physician Fritz Zernike builds the first phase-contrast microscope: Using a property of diffracted light that allows us to see microorganisms or the inside of a cell without dyeing them.

1938

LASER

Theodore Maiman invents the first device to produce a ray of visible, intense, coherent and monochromatic light: the laser. This discovery would prove useful in fields ranging from medical science to warfare.

1960

OPTICAL FIBRE

Even though the physicist N Sinh Kapany has been performing tests since 1952, this year the first long and efficient cables that transmit light pulses by means of thin glass fibre are produced.

1970

SPACE TELESCOPE

NASA and the European Space Agency launch the Hubble Telescope, which orbits 559km (347mi) above Earth to observe the cosmos. It completes an entire orbit around Earth every 97 minutes.

1990

1990

© 5000 images

ARCHIMEDES

Greek, 287-212 BCE

Brief Bio

One of the world's most celebrated mathematicians and philosophers, his discovery of hydrostatics, application of pi in geometry and invention of numerous war machines made him revered both in his day and centuries later. His weapons of war were vital to the defence of Syracuse when it was besieged by the Romans from 214 to 212 BCE, but the city eventually fell and the great man was slain.

Top 5 facts

ARCHIMEDES

GENIUS MATHEMATICIAN
SYRACUSE, SICILY, 287-212 BCE

01 INVENTOR OF SUPERWEAPONS

While living in Syracuse he designed numerous weapons to defend the city from attackers, including an elaborate 'death ray' designed to concentrate the rays of the Sun onto enemy ships, setting them alight. He also developed effective catapults and a 'giant claw' that would latch onto the hull of a ship and cause it to capsize.

02 Master of levers

Archimedes applied his understanding of geometry and physics to develop immensely powerful levers. By calculating the length, strength and position of the lever and fulcrum point relative to an object being lifted, he revolutionised methods of construction. He was so confident in the potential of his levers, he even claimed: "Give me a place to stand, and I shall move the Earth."

03 Defined the number pi

A brilliant mathematician, Archimedes is credited with forming the earliest accurate measurement of a circle, using the irrational number pi (circa 3.14). Also known as Archimedes' Constant, this number was theorised by the mathematician in his book *Measurement of a Circle*. Though it's been described more accurately since, Archimedes' number is still used today.

04 Discovered hydrostatics

When taking a bath one day, he noticed the displacement of water was proportionate to the volume of his body submerged in it – it was rising up the sides as he lowered himself down. Legend has it he was so astonished by this epiphany, which formed his understanding of hydrostatics, that he ran naked through the streets crying the now-famous phrase 'Eureka!'

05 His screw changed the world forever

Though it seems relatively simple to modern eyes, Archimedes' screw was revolutionary at the time and demonstrated how low-lying water could be transferred upward to canals or artificial streams for irrigating farmland. This invention would later influence Leonardo da Vinci in his attempts to develop a functioning flying machine.

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Heroes & Villains

Alfred

the Great

Warrior, scholar and king of the Anglo-Saxons, Alfred led a great crusade to unite his kingdom and rid it of Viking invaders

Written by Chris Fenton

In the dark and foreboding landscape of 9th-century England, the Anglo-Saxon civilisation, which had called the British Isles home for 400 years, stood on the brink of collapse. Fierce warriors descended on English shores from dragon-headed longships, looking for plunder and bloodshed. Children huddled close to their families inside their thatched long halls, fearing the panicked screams of terrified neighbours - the calling card of these merciless raiders. The Viking invaders were not satisfied with just crops or gold, although for rural farmers like the Anglo-Saxons this was bad enough. They wanted to enslave and brutalise the people themselves and destroy their original society. With the other Anglo-Saxon kingdoms divided or conquered, Wessex (The Kingdom of the West Saxons) stood alone against this unstoppable menace. It was in this bleak and embattled world that King Aethelwulf's wife Osburh gave birth to their fifth son in an unremarkable Berkshire village in 849 CE. They named him Alfred and he would change the fortunes of the Anglo-Saxon cause forever.

Alfred was forced to grow up quickly, learning the ways of an Anglo-Saxon warrior. He was taught to ride, hawk, hunt and, most importantly, how to defend himself with a shield and kill with a sword. The family he grew up in was a close-knit group and, in keeping with Anglo-Saxon families at the time, many generations of the same kin lived under one roof and passed down their knowledge to the young. While Alfred saw the practical lessons he was learning from his father's warriors as a duty,

his real interests lay in the scholarly works his father engrossed himself in. He particularly enjoyed poetry and one story involving this passion showed an unrelenting determination that would follow him into adulthood. His mother had promised one of her five sons an illuminated book of Anglo-Saxon poetry for the first one of them who could memorise the text off by heart. Alfred could not read, so he found a teacher and made him repeat every line in the book until he had it completely memorised. He won his prize and proved to his family that when he wanted something he would get it.

Boyhood games and poetry recitals came to an abrupt end when a Viking army landed in the Anglo-Saxon kingdom of East Angles in 865. Stories of these iron-willed and bloodthirsty warriors had circulated in his father's court and it was widely feared that they were undefeatable.

Alfred disagreed, if his years learning about his ancestors and hunting game had taught him anything it was that no enemy was indestructible. The huge Viking war host, led by the fearsome warriors Halfdan and Ivar the Boneless, invaded Northumbria, looted York and then turned back to East Angles. The host captured the king of East Angles, Edward, and in a display of power killed him in a ritual sacrifice to their pagan gods. They renamed Edward's realm East Anglia before turning their attention to Wessex, quickly taking the small town of Reading in 870.

There was little doubt in Alfred's mind that the terror and destruction the Vikings had wrought across the other Anglo-Saxon kingdoms would be brought to Wessex. He and his older brother Aethelred set out to meet them in open combat,

Alfred was the first king on the British Isles who established a universal set of written legal rights for the people of his lands

Alfred's scholarly skill was unmatched in the British Isles. He could speak and read Latin and established the first school for the nobility

"As the Vikings crashed down onto them they were slaughtered on the shields and swords of the Anglo-Saxons"





Alfred disguised himself as a minstrel to infiltrate the Danish camp

Alfred the warrior and tactician

Warfare during Alfred's reign was not for the faint of heart. Battles involved thousands of fierce warriors brutally killing each other with swords, axes, maces or any other sharp object that came to hand in uncontrolled melees. Battlefields would run with blood as the victor claimed their prize of crops, loot and slaves from the local populace. The Anglo-Saxon tactic of forming a shield wall to protect their warriors against incoming missiles was partially effective at keeping their soldiers alive so they could close in for hand-to-hand combat, but its effects were limited against a highly mobile foe like the Vikings, who specialised in surrounding the enemy quickly. Alfred was aware of this problem and of the relative weakness of mustering a diffuse and at times reluctant community of settlements to stave off encroaching Viking raids. He ordered a fledgling Anglo-Saxon navy, with bigger ships than the Vikings' and the construction of a system of forts throughout Wessex known as burhs to allow his warriors to effectively defend their homes from the invaders. He also established a mobile standing army that could respond to foreign threats far more quickly than the hapless local fyrd or army. It also meant that the Vikings could no longer claim land and lordship over the people they conquered, allowing Alfred to consolidate his hold over his own kingdom.

mobilised men to serve in their army and after days of marching they met the Vikings on a ridge near Ashdown. The Vikings were surprised by the hot-blooded aggression of Alfred; he attacked uphill - like a "wild boar", according to the chronicler Bishop Asser - tearing into the Viking lines and causing them to retreat while his brother was still at prayer. It was said afterward that the field was "covered in bodies." After years of plundering the Vikings had finally met their match.

Alfred's triumph was celebrated throughout Wessex, but it was to be short-lived. The Battle of Ashdown was followed by defeat after defeat; large stretches of Wessex were soon under Viking control. It was during these bleak days of 871 that Aethelred died and Alfred claimed the throne of his embattled kingdom. He knew he could no longer defeat the Vikings and attempted to pay them off, affording the realm some respite, but the raids soon continued, so in 876, he locked swords with his greatest adversary, the Viking chieftain Guthrum at Wareham. In a siege that involved Alfred using longships off the Dorset coast to block the Vikings' escape route to the sea, Guthrum was defeated and made to swear an oath of peace to Alfred on a ring of the Norse battle god Odin. In an act that Alfred would never forget, Guthrum went back on his word, murdered Alfred's emissaries and inflicted a crushing defeat on Alfred's forces at Chippenham during a Christian feast day. It was an act designed to reaffirm Guthrum's fierce commitment to his warrior gods.

Alfred's commitment to Christianity was well known; the Pope gave him a piece of what was thought to be the true cross

Alfred barely escaped with his life, most of his men had been killed or captured by the Viking host and it seemed that all was lost. He ran into the marshes and spent the next few months evading capture, eventually holding up in a peasant's house. A story was written in later chronicles that he was so consumed by the threat to his kingdom that

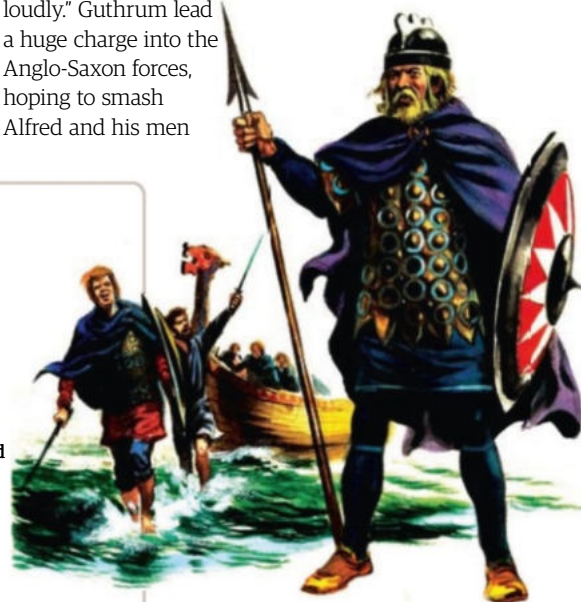
when asked to watch over some cakes by a peasant woman, his mind wandered and they burned. The woman admonished him, saying, "Look here, man, you hesitate to turn the loaves which you see to be burning, yet you're quite happy to eat them when they come warm from the oven." Rather than punish her, Alfred was said to have acted humbly. The tale not only showed how far the king had fallen but how his troubles had now affected his character.

Rather than surrendering his kingdom, Alfred gathered his warriors around Southampton and used guerrilla tactics to turn the tables on the raiders until he could nail them down to one last engagement at Edington. It was the greatest battle of Alfred's career. The moment was captured by one of his scribes: "Then the band of bold men was quickly made ready, men brave in battle [...] warriors marched out, bore banners of victory [...] heroes beneath their helmets at the break of dawn; the shields resounded loudly." Guthrum led a huge charge into the Anglo-Saxon forces, hoping to smash Alfred and his men

Defining moment

Battle of Ashdown 8 January 871 CE

Alfred leads an attack on Viking positions at Ashdown after the Vikings begin to sweep through the area and into Wessex. Knowing that a muster of all available warriors would be the only way to secure victory, Alfred finds a Sarsen stone and blows into it. The large boom that this creates musters all the men in the area to battle. The fighting lasts hours as the Vikings and Anglo-Saxons go head-to-head in close combat that leaves hundreds dead, but eventually Alfred prevails and the Viking host retreats eastward. The Battle of Ashdown is Alfred's first victory.



● Viking invasion

The Vikings launch an invasion of East Angles and much of the English mainland is taken by the Danish army. Alfred is made secundarius (advisor) to the king.

865 CE

Timeline

849 CE

● Birth of a warrior

Alfred is born in Wantage, Berkshire. He is the youngest son of King Aethelwulf and his first wife Osburh. Aethelwulf insists his children succeed to the throne in turn, making Alfred fifth in line.

849 CE

● Pilgrimage to Rome

Alfred goes on a pilgrimage to Rome where he is made a consul by the Pope. He also spends time in the court of Charles the Bald of the Franks where he learns about his greatest enemy: the Vikings.

853 CE



● Marriage to Ealhswith

Alfred marries Ealhswith of Mercia as a way of showing solidarity against the invading Vikings. One account describes her as "the true and dear lady of the English."

868 CE

● Battle against Ivar the Boneless

Alfred and Aethelred fight the Viking host led by Ivar the Boneless in Mercia. Despite fierce fighting they cannot prevent the Vikings from crushing resistance wherever they find it.

868 CE

● Alfred is made heir apparent

In order to prevent a succession crisis in the face of the Viking invasion the reigning king, Aethelred, agrees that Alfred should be next in line to the throne despite Aethelred having children.

January 871 CE

with one bold gesture. Rather than retreat, Alfred was determined to stand his ground; there could be no more defeat. He ordered his men to form an impregnable shield wall and as the Vikings crashed down onto them they were slaughtered on the shields and swords of the Anglo-Saxons. Alfred then led a charge into their camp at Chippenham and made "great slaughter among them" until they retreated into their fortress and were "brought to the extreme depths of despair." Trapped and starving, Guthrum was forced to surrender.

Guthrum and his Viking army retreated from Wessex for good but this did not mean they were out of England as a whole. The Vikings had established settlements in East Anglia and Northumbria and were becoming neighbours rather than raiders. Alfred saw this and in an act that showed his keen intellect he forced Guthrum to convert to Christianity and became his godfather. By doing this he ensured an oath of allegiance that would guarantee the stability of his kingdom. The Viking threat did not disappear after their defeat at Edington and as a warrior, Alfred knew that an attack on Wessex could happen at any time. He built up his defences and established a system of forts to help protect the countryside; he also instigated new laws based on the *Bible*, which consolidated his grip on power.

His most decisive act during the years after his victories was the consolidation of the rest of the Anglo-Saxon kingdoms under his leadership. Reasoning that one kingdom united was stronger and more able to resist foreign invasion than a divided land with divided interests, Alfred targeted London, the most important trading town in the whole of England. London was controlled by a

Mercian King called Ceolwulf, who had died at some point after 880, but Alfred's role in his death is unclear. Any involvement would have stained his reputation as England's 'darling' since London at the time was an Anglo-Saxon settlement. Whether London was captured or acquired, the city was brought under Alfred's control in 886. The symbolism of this act, along with his eldest daughter marrying Aethelred, the lord of the Mercians, united all of Anglo-Saxon England in a tenuous peace.

By 890, age had begun to creep up on Alfred. He suffered from crippling stomach pain and it was sapping his strength, along with the complexities of trying to rule a disparate group of settlements in his own kingdom and remain the most influential man in Mercia. Despite this, he continued building his realm by enlightening his subjects.

He translated a number of volumes from Latin to English, including *The Ecclesiastical History Of The English People* and Gregory the Great's *Pastoral Care*, which instructed bishops on their duties. Alfred's contribution to the development of the English Church earned him such recognition that his most committed followers sought to get him canonised.

In 899, Alfred died aged 50, passing on a secure and powerful dynasty to his son Edward. The

Anglo-Saxons would remain dominant in England for the next 167 years, until another great invasion in 1066 led to the investiture of a Norman king named William. Alfred had secured this legacy with his bravery, warrior skills and political savvy. Anglo-Saxons remembered him as 'England's shepherd, England's darling', history honoured him with a far grander title - Alfred the Great.

It is widely thought that Alfred suffered from Crohn's disease, which would explain his thin build and ongoing health problems

A society divided

Kinship and lords

Anglo-Saxon society was dominated by bonds of honour and loyalty to kin groups in individual settlements around the country and the tenuous fidelity these groups swore to the nobility and the king.

Invaded land

The Anglo-Saxons themselves were invaders of the British Isles, the Angle and Saxon tribes originated from Germany and Denmark and established settlements across England, subjugating the native Britons. In the time of Alfred, the Saxons had fully settled in Britain and were now under threat from the Vikings.

Language barrier

In many ways, the British Isles were a cosmopolitan collection of different tribes, all of whom spoke a number of languages and dialects. The Angle, Saxon, Norse, Celtic and Latin languages combined together during this period to form the base of what we now know as the English language.

Divided religion

There was no dominant religion in Europe during this period, Christianity was becoming widespread but various forms of paganism still held sway in many lands, including the British and Scandinavian kingdoms. The Anglo-Saxons had converted to Christianity in 601 and referred to the Viking invasion as the 'heathen invasion.'

Warrior society

Every 'free' Anglo-Saxon male could be called upon to fight at any time by his lord in the fyrd or army. These groups would often be poorly equipped as individual warriors had to arm themselves, and it took strong leadership to keep these unruly bands together.

Defining moment

Betrayed by Guthrum January 878 CE

After a Viking incursion at Wareham in Dorset is defeated, the Viking chieftain Guthrum submits to Alfred and promises to withdraw his forces to Mercia. He seals his promise on a holy ring of the Viking god Odin. Instead of honouring his pledge to the warrior god, Guthrum betrays Alfred and escapes, reassembles his war host and destroys Alfred's army at Chippenham, forcing Alfred to flee into the countryside. The Anglo-Saxon chronicles speak of a dispirited, battle wary and lonely Alfred seeking shelter with peasants.

Defining moment

The Battle of Edington May 878 CE

In the greatest battle of Alfred's career, he confronts his old enemy Guthrum for the last time on the field of battle. The battle is a desperate struggle for the survival of Alfred's kingdom. Much of Wessex is now under threat from the Viking horde assembled in the northern part of the kingdom. Alfred orders his men to form a dense shield wall, a common tactic used by Anglo-Saxon armies and together they hold firm against the Viking tide that sweeps onto them. He wins a spectacular victory and pursues the Vikings to Chippenham, where they surround and starve them out, forcing Guthrum to surrender.

London liberated

Alfred takes control of London through a disputed action which may have involved him laying siege to the area. He gains de facto dominance over all Anglo-Saxon territory by taking the most important trading city in the British Isles.

886 CE

The law codes

After studying Latin, Alfred presents to his kingdom a collection of laws put together in a 'dooms book' which is based on Christian teachings from the *Bible*. He uses these laws to strengthen his influence in the other Anglo-Saxon kingdoms.

893 CE

Crowned king

After the death of Aethelred, Alfred is crowned king of Wessex. Word is then received that the Vikings have won more victories within the kingdom. Instead of fighting them, Alfred strives for peace.

23 April 871 CE



Treaty of Wedmore

Alfred signs a peace treaty with Guthrum, which gives the Vikings control of East Anglia on the condition that Anglo-Saxon rights are fully respected and that the Vikings immediately stop taking slaves from Wessex townships.

878 CE

A gift of the true cross

In recognition of Alfred's true piety, Pope Marinus I presents a gift of what he believes to be a piece of the true cross, as well as other priceless treasures from Alfred and his court.

883 CE



Death of a hero

Alfred dies in 899 aged 50, ensuring a secure land for his lineage and Wessex as the dominant player of the three Anglo-Saxon kingdoms in England. He is remembered as Alfred the Great.

899 CE

What was it like?

TEXAS 1901

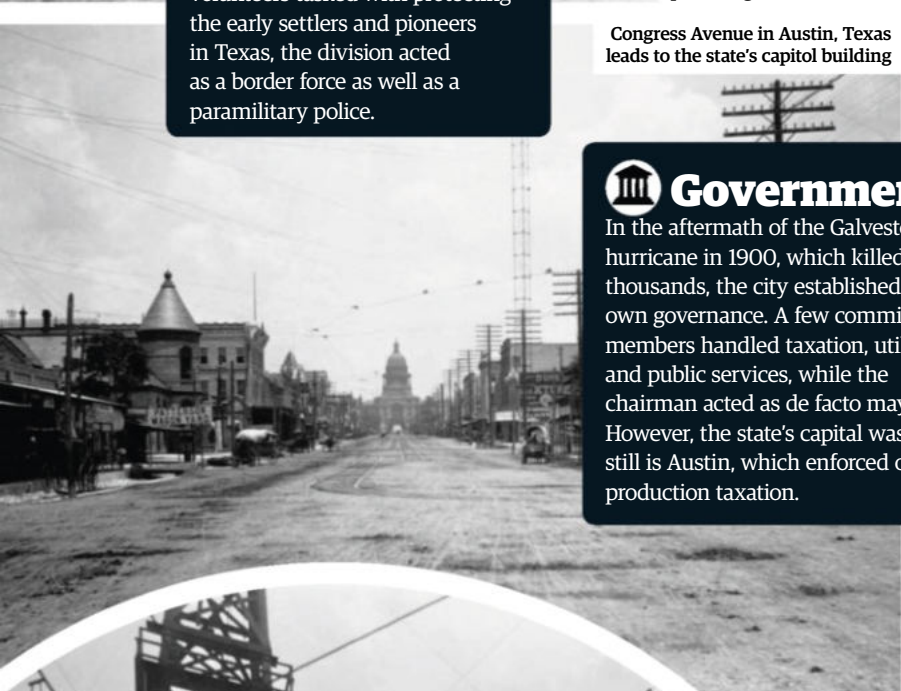


Military

The Texas Ranger Division has existed as the state's law enforcement since 1836. Originally comprised of a small group of volunteers tasked with protecting the early settlers and pioneers in Texas, the division acted as a border force as well as a paramilitary police.

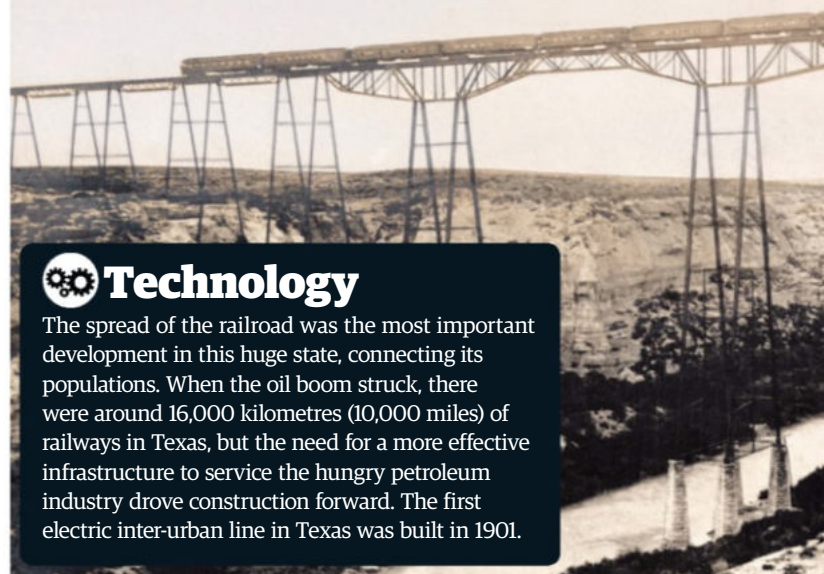
Three Texas rangers patrolling the state border

Congress Avenue in Austin, Texas leads to the state's capitol building



Government

In the aftermath of the Galveston hurricane in 1900, which killed thousands, the city established its own governance. A few commission members handled taxation, utilities and public services, while the chairman acted as de facto mayor. However, the state's capital was and still is Austin, which enforced oil-production taxation.



Technology

The spread of the railroad was the most important development in this huge state, connecting its populations. When the oil boom struck, there were around 16,000 kilometres (10,000 miles) of railways in Texas, but the need for a more effective infrastructure to service the hungry petroleum industry drove construction forward. The first electric inter-urban line in Texas was built in 1901.



Workers leaving the Pennsylvania shipyards in Beaumont, Texas

Economy

Much like the famous gold rushes elsewhere, scores of prospectors, oil companies and small businesses flocked to the region to exploit the wealth rushing out of the ground. The volume of oil produced by the Spindletop site reduced its price to three cents a barrel.

Industry

Oil was first brought up in Spindletop in January 1901 with the strike of the famous Lucas gusher. It took nine days to cap the strike and bring it under control, but it would prove to be the first major oil find of many in Texas. It heralded a century of oil production and the founding of the petroleum industry in the region.



The Spindletop oilfield quickly became the core of the state's economy





The South Pacific Railway crossing the Pecos Viaduct



Society

At the turn of the century, Texas was still in the grips of racial segregation. The African-American population in Texas had steadily declined up until 1900, numbering around 600,000. State attitudes towards race persisted into the 20th century and arguably beyond.



Education

The Texas Constitution of 1876 decreed that millions of acres of public land would be dedicated to the construction of state schools and universities. The University of Texas opened in 1883 and grants of land were also given over to public schools, which benefited from the wealth pouring into the region.



At one stage the Lucas gusher produced over 100,000 barrels (15.9 million litres) of oil a day

The Spindletop oil find quickly made the news



Media

Newspapers throughout Texas, including *The Dallas Morning News*, student paper *The Daily Texan* and the *Houston Post* were key to spreading the news of the oil find in Spindletop. The latter printed the now-famous images of the Lucas gusher spewing oil high into the air.

What was it like? TEXAS, 1901



An oil find would mark the explosive beginning of an economic boom – one that would redefine the Lone Star State for the coming century

The earth shook violently beneath the salt fields south of Beaumont, Texas on 10 January 1901. Those workers still operating in and around the towering derrick, which had drilled 347 metres (1139 feet) into the ground, stopped what they were doing and ran for their lives. Minutes later, a torrent of mud, gas and eventually – and most importantly – oil erupted from the ground. The great Texas Oil Boom had blasted off in style.

Just the previous year, the beleaguered southern state had been battered by one of the worst hurricanes in US history, completely

destroying the city of Galveston, one of the state's key ports. Prospectors in search of the black gold had been frustrated for years, but this discovery signalled the beginning of a new era in the state's history. The strike of oil flooded in not just wealth for the lucky prospectors and growing petroleum companies, many of which still exist today, but also for the state, which taxed production heavily. The industry, economy and entire culture of Texas gradually turned from cattle and agriculture and on to supporting and profiting from the black riches below the ground, ensuring the Lone Star State would prosper for generations to come.



Front line

The English front line consisted mainly of dismounted knights and men-at-arms. Out of shot, archers were posited either side, hiding in the woods that bordered the battlefield.

King Henry

Unlike the French king, Henry personally led his troops into battle. He was a king first and foremost but never stopped being a warrior - even on his deathbed he insisted on being carried to the next siege.

Crown

Unlike his father, who used decoys at the Battle of Shrewsbury years earlier, Henry's affixing of a crown on top of his helmet made sure he stood out. The crown was damaged in the battle after he took an axe blow to the head.



Prayer

While lined up for battle, Henry led his troops in prayer, asking for God to grant them victory against the French forces.



THE BATTLE OF AGINCOURT

AGINCOURT, FRANCE
25 OCTOBER 1415

While his father, Henry IV, had been preoccupied with consolidating - and in the process effectively legitimising - his rule, his son, King Henry V of England, saw the opportunity to expand the British Empire by taking back lands he believed rightfully belonged to him, starting with France.

In 1415, he proposed to marry Catherine, the daughter of the French king Charles VI, in addition to audaciously demanding the handover of the Plantagenet lands of Normandy and Anjou as his dowry. Unsurprisingly, Charles refused this offer from the upstart young king, with one account claiming that he sent the young Henry a case of tennis balls - the upshot being that his time would be better spent playing games than attempting to invade France.

Unperturbed by Charles' taunting, Henry set sail for France, determined to capture the throne for himself. As well as the prospect of regaining the lost lands of his ancestors, success abroad would have the effect of galvanising support back home, and in the process focus attention away from his cousins' royal ambitions.

His success was almost instant. Immediately upon landing, he captured the port of Harfleur, although while on the way to the port of Calais, he found his path blocked by an army that substantially outnumbered his own. Faced with this much-larger French army, he put his superior tactical acumen to good use, decimating the French forces via the use of vast quantities of longbow archers to devastating effect. Between 7,500 and 10,000 French soldiers are estimated to have been killed according to various accounts,

with about 1,500 noblemen taken prisoner, while the English forces' casualties are numbered at around 112, with high-ranking noblemen like the Duke of York and the Earl of Suffolk being counted among the dead. Even more French prisoners were originally taken, but in a show of calculated - but arguably justifiable - ruthlessness, Henry had ordered many of them to be put to death in order to avoid the possibility of them linking up with the remnants of the French forces in order to carry out a retaliatory attack.

Proving that this decisive victory was no fluke, Henry followed up this stunning victory with the conquest of Normandy - a campaign that lasted for three years. By June 1419, Henry controlled most of Normandy. Agincourt had not only been a military triumph; it had been a moral victory too, galvanising the English both abroad and at home.

Facing defeat, Charles agreed to the Treaty of Troyes, which formally recognised Henry as the heir to the French throne - at the expense of his own son - and finally allowed Henry to marry Catherine. Flushed with success, in February 1421 he returned to England for the first time in three and a half years, arriving in his homeland as a conquering hero.

His successful conquest of much of his country's hated enemy had made him extremely popular back home, and the Battle of Agincourt in particular would forever serve as a poignant example of his strength, tactical skill and ingenuity in battle - yet another example of the plucky underdog spirit and ability to triumph against the odds that future British forces would demonstrate in the future.

Greatest Battles



English

TROOPS 6,000-9,000

LONGBOWMEN 5,000

KNIGHTS 1,000



KING HENRY V

LEADER

King Henry was a skilled battle commander, leading his troops into battle and fighting alongside them.

Strengths Brave and experienced military leader.

Weaknesses His forces were numerically inferior to those of the French.



LONGBOWMAN

KEY UNIT

The effectiveness of the English longbowmen played a massive part in the success of the battle.

Strengths Long range and difficult to attack.

Weaknesses Relatively poorly armoured and vulnerable if attacked.



LONGBOW

KEY WEAPON

The longbow's six arrows per minute could wound at 360m (1,200ft), kill at 180m (600ft) and even penetrate armour at 90m (300ft).

Strengths Accurate and destructive in large numbers.

Weaknesses Finite number of arrows available to them.

01 Camping for the night

On 24 October, about 48 kilometres (30 miles) from Calais in the town of Frévent, English scouts reported an immense French army blocking the road ahead. Seeing that they could not pass without meeting them in battle, Henry ordered his forces to camp there for the night.

02 Taking their positions

The English positioned themselves across the road to Calais in three groups of knights and men-at-arms: the right side led by Lord Camoys, the left by Sir Thomas Erpingham and the Duke of York in the centre. The French had the Constable of France leading the first line, the Dukes of Bar and d'Alençon the second and the Counts of Merle and Falconberg in charge of the third.

03 Forward banners

Bored of waiting for the French to begin the attack, Henry ordered his troops to advance. Once within range of the French archers, the English troops halted, the divisions closed and the archers set a series of pointed stakes in the ground, forming a fence. Within the woods surrounding the two armies, Henry directed groups of archers and men-at-arms to move through the trees to get closer to the French.

04 Arrows away

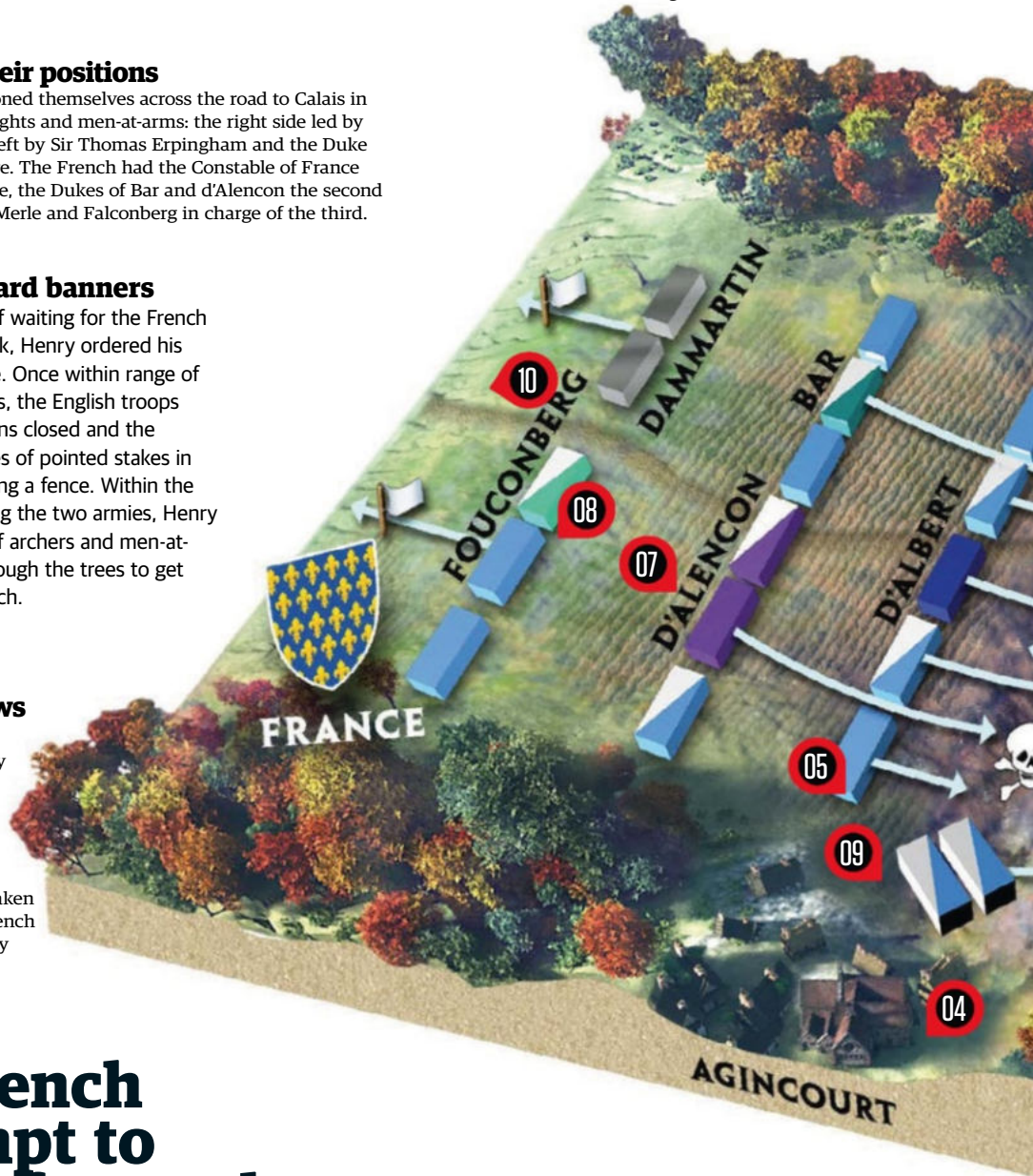
Shortly after, Henry gave the order for his archers to shoot the French, who were massed together in a big, unwieldy group. Taken by surprise, the French forces incurred very heavy casualties.

05 French attempt to move forward

After the shock of this assault, the French forces tried to advance in order to take the battle to the English. However, having already suffered massive casualties, they were impeded by the dead and dying horses and men already shot down in front of them. Reduced to walking pace, they were easily picked off by the English archers concealed in the woodlands on the flanks.

10 French camp ransacked

With the battle over and any local resistance crushed, the English troops ransacked the largely abandoned French camp, having secured a victory that would live on in legend.



06 Archers join the fray and flanks

With the battle continuing along the fence of stakes, the English archers abandoned their positions and joined the knights in fighting against the French cavalry forces - most of which had been forced to dismount - which were reinforced by soldiers attacking on the flanks.

09 Local French force attacks baggage

Although the main battle was over, it threatened to reignite when a local French force circumvented the forest and attacked the English baggage. Fearing the substantial amount of prisoners would rebel and join this assault, Henry ordered them executed - which many were, until the attack was repelled.



07 French second line moves forward

The French second line, led by D'Alencon, moved forward in earnest to assist the beleaguered first line, but was overwhelmed in a similar fashion. Seeing the futility in continuing, he attempted to surrender to Henry, but was killed before he could reach the king.

08 Third line retreats

Seeing the fate that had met the first and second waves, the third line of the French forces waited on the edge of the field, pondering whether to join. After being greeted by a messenger sent by Henry, who informed them that if they joined the battle, none of them would be spared, they made their decision. Unsurprisingly, considering their options, they left the battlefield.



France

TROOPS 36,000

CAVALRY 1,200

KNIGHTS 8,800



CHARLES D'ALBRET

LEADER

The former Constable of France co-commanded the French army alongside Jean le Maingre.

Strengths Experienced soldier.

Weaknesses Low social rank, so orders were ignored by noblemen.



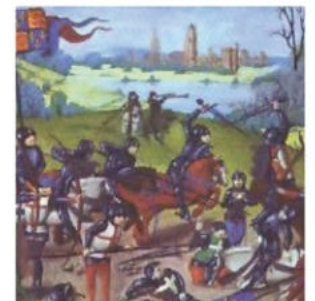
KNIGHTS

KEY UNIT

Much of the French forces consisted of heavy infantry, making them tough adversaries in open combat.

Strengths Heavily armoured and effective at hand-to-hand fighting.

Weaknesses Slow, cumbersome and easy to pick off by archers.



HORSES

KEY WEAPON

Large numbers of knights on horseback often presented a fearful sight for their opponents.

Strengths Fast and powerful opponents in battle.

Weaknesses Cramped and boggy locations made them useless.

Bluffer's Guide The Celts

EUROPE, 1200 BCE - CA 500 CE

Who were they?

The Celts were an loosely defined group of tribes who collectively formed one of the largest groups of people in ancient Europe. They lived predominantly off the land in small communities, some of which gradually merged over time to become larger settlements, and were informally tied by a similar religion, language and culture.

Boudica's uprising

One of the most famous Celts was Boudica, the queen of the Iceni tribe. She rallied many of the tribes in a rebellion against Roman rule after her kingdom was annexed and her daughters raped. Despite destroying a number of large settlements - like London and Colchester - she was ultimately defeated at the Battle of Watling Street in 61 CE.

To the ends of Europe

They were scattered over a wide area, with tribes settled in locations ranging from the British Isles to central Europe and the borders of Ukraine. Some groups reached even farther afield, settling in the Balkans and encroaching toward west Asia.

Ancient origins

The earliest archaeological evidence of the Celts' existence dates back to around 1200 BCE, although what we would refer to as the Celtic civilisation was in existence by around 750 BCE. They began to migrate to Britain around 500 BCE, and although they never truly 'died out', many either migrated or merged with the Roman populace.

A stele for a deceased tribal aristocrat



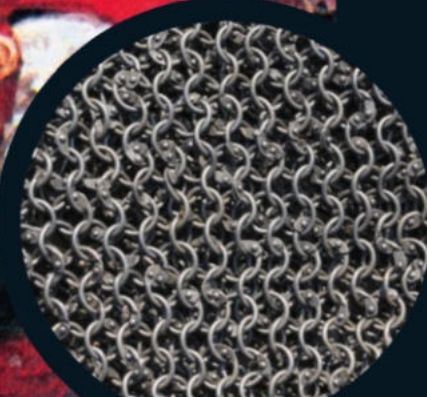
A reassembled calendar tablet found in Coligny

No mere barbarians

Myth portrays them as savages, but they possessed impressive reserves of knowledge. For instance, their calendars were more accurate than the Romans', proving they were capable of mathematical and scientific thought.

Warrior race

The Celts were ferocious warriors, with their people trained in battle from childhood. Their weapons were predominantly made of iron, and they prided themselves on who could collect the most enemy heads, which they believed contained a person's soul.



Celts made intricate chain armour

Druids

The Celts possessed a strong religious culture, with holy men called druids having a strong presence. They spent 20 years training for their position, gaining knowledge of Celtic customs, astronomy and philosophy, and often acted as advisers to their rulers and the general populace alike.

Road builders

Although Romans generally take the credit for being master route planners, the Celts actually constructed a road system before them. Their paths were made out of wood, and connected the different settlements for purposes of trade.

Boudica led an army against Roman invaders

Key figures

Boudica

Ca 60 CE

The warrior queen of the Iceni tribe who led the uprising against the Romans in 61 CE.

Vercingetorix

82-46 BCE

The chief of the Gallic Arverni tribe, who united the Gauls against the Romans during the Gallic Wars.

Caratacus

10-50 CE

The chief of the Catuvellauni tribe evaded the Romans for years before being captured and ultimately pardoned.

Cassivellaunus

Ca 54 BCE

He led the defence against Julius Caesar's second expedition and military campaign in Britain in 54 BCE.

Commius

Ca 50 BCE

The king of a number of tribes at various point, he allied with Roman leader Julius Caesar before later rebelling.

Major events

Celts settle in Britain

500 BCE

Around this time, the first Celtic tribes started to settle in Britain, having gradually migrated from central Europe.

Celts sack Rome

387 BCE

The Gallic Celts ransacked the city after defeating the Romans at the Battle of the Allia.

Romans in Britain

43 CE

After crossing the English Channel, Romans ultimately replaced the Celts as the ruling force in Britain.

Boudica's uprising

61 CE

Under her leadership, an estimated 70,000 to 80,000 Celts unsuccessfully rebelled against Roman rule.

Collapse of the Roman Empire

476 CE

With the fall of the Roman Empire, much of the remnants of the two civilisations would come to merge together.

Druids were the Celts' religious leaders



Tour Guide

Plaza de Mayo



The revolutionary heart of Argentina, embodying a legacy of protests, uprisings, violence and an ongoing struggle for justice

Plaza de Mayo has been a centre for political activism in Argentina since 1810



End here

08

01

Start here

01 Revolucion de Mayo

In May 1810, a series of events unfolded in Buenos Aires that would change Argentina forever and see it break from its colonial ruler, Spain. The May Revolution coincided with the Napoleonic occupation of Spain, which ousted Ferdinand VII. The square was a focus of the uprising due to its proximity to the Cabildo, the city's colonial headquarters, which are still standing today. The Piramide de Mayo, which dominates the Plaza, was constructed by one of the first independent juntas in the city to commemorate the revolution.



02 THE BOMBED PLAZA

On 16 June 1955, an air strike on the presidential palace killed over 300 people in and around Plaza de Mayo, mostly civilians. Shrapnel damage from the air strike can still be seen on many of the buildings surrounding the Plaza.



03 Champion of Argentina

The monument to Manuel Belgrano - considered one of the country's main liberators - was inaugurated in 1873, on the anniversary of his famous victory at the Battle of Tucuman that took place on 24 and 25 September 1812. The battle was part of the Argentine War of Independence.

08 Elected the heir to St Peter

In March 2013, Jorge Mario Bergoglio became Pope Francis I, the first pope from the southern hemisphere. The Metropolitan Cathedral is the capital's central Catholic church and Pope Francis' former diocese.



07 The 2001 December riots

During the winter of 2001, Argentina suffered a period of civil unrest and Buenos Aires saw much of the worst rioting against government cuts and the national debt. Rioters clashed with police and once again Plaza de Mayo became a battleground between police and protesters. Over 22 people were killed in clashes all over the country and annual protests are now held to commemorate the events, which included the ousting of President Fernando de la Rúa.

A revolutionary square

Plaza de Mayo has been at the centre of many of the key events that have shaped modern-day Argentina. The country's turbulent and often violent past in the wake of Spanish colonial rule is littered with travesties of justice, dictatorships and uprisings. Named after the Revolución de Mayo, which saw Argentina declare independence from Spain in 1816, the Plaza has been a constant focus for the Argentine population, where mass demonstrations against alleged government injustices are still regularly seen. The most famous is the Madres de Plaza de Mayo, a protest group that has become synonymous with the area, and whose white headscarves can be seen depicted on and around the Plaza.

06 FIGHTING FOR JUSTICE AT THE PLAZA

The Mothers of the Plaza de Mayo is a protest group that originally comprised of Argentine mothers of children who had been taken from them during the Dirty War, in which thousands of dissidents' children are thought to have been kidnapped by the government.

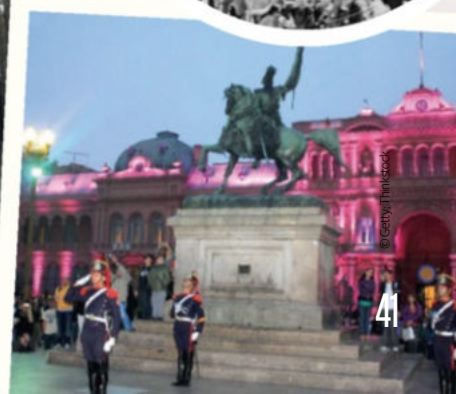
05 Backing the invasion

On Friday 2 April 1982, Argentine forces attacked and occupied the British-controlled Falkland Islands, or Las Malvinas. Eight days later, a mass of nationalist supporters rallied in the Plaza to support President Leopoldo Galtieri.



04 Eva's last speech

On 17 October 1951, the first lady of Argentina, Eva Perón, gave her last and most memorable speech from the balcony of the presidential palace, the Casa Rosada or 'pink house.' Eva's championing of civil rights as well as her powerful charisma had made her a living saint for many in Argentina and an worldwide icon. Dying of cancer, she gave her final speech six years to the day after her husband, president Juan Perón, was released from prison, on what is still observed as Loyalty Day.



What if... Germany had won WWI?

WORLD WAR I, 1914-1918

Written by Jonathan O'Callaghan

STEPHEN BADSEY



Stephen Badsey is a professor of Conflict Studies at the University of Wolverhampton.

An internationally recognised military historian, he has written or edited more than 90 books and articles, his writings have been translated into five languages and he appears frequently on television and in other media.

What would have happened if Germany had won World War I?

It depends on when they win it. If they win a short war in 1914, with the Schlieffen Plan [the plan to quickly defeat the French first to avoid fighting on two fronts] working, it's different than if they win a negotiated victory after a long, hard fight at the end of 1916 or early in 1917, which is the other possibility. Either way, you get a large German Empire dominating central and western Europe. What is likely to happen is you get a very strong and dominant Germany, [but one] that is not quite as bad as Hitler's Germany in two respects. One is that it doesn't have a plan for the genocide of the Jewish population of Europe - at least we don't think it would have - and it doesn't have a plan for global domination. With those two exceptions, you get a very nasty, racist, expansionist state with enough power in terms of economic and political power to dominate Europe, which means it can do something no power had ever been able to do: it can afford to have an extremely large and extremely good army, and it can also afford to have an extremely good navy, large enough to defeat the Royal Navy. They don't actually have to invade Britain, although they probably would, but they can just starve it into submission.

Would this have led to another war?

If Germany wins World War I, they get into a strong position [against the rest of Europe] and then there's almost certainly a war about ten years later, in which the British are defeated. So the British have absolutely no motive for letting this happen. In 1914, the British have three things that nobody else on the planet has got: they've got the world's only global empire with massive resources, they've got dominant control of the world's financial systems through London and they've got the biggest and most powerful navy in the world. So, why should they sit there doing nothing while a country that will almost certainly defeat them in the next war ten years on establishes that position [to leapfrog them]?

Without a German defeat, is there any chance of someone like Hitler still rising to power?

The short answer is yes. Mussolini came to power in Italy and Italy was on the winning side in World War I. The Treaty of Versailles was [Hitler's] excuse, no reputable historians believe that World War II leads inevitably from World War I. The idea that a botched peace treaty in 1919 inevitably leads to World War II is not historically accurate.

What might a victorious German Empire have looked like in practice?

Again, it depends on when it happens. At the start of the war in 1914, the Germans have no real concept of any war aims except reaching the enemy capital, which had been their experience in the Franco-Prussian War from 1870 to 1871, for example. When that fails in September 1914, they realise they're going to need some war aims so they come up with something called the 'Septemberprogramm'. This is a plan for a domination of Belgium as a client state, the Netherlands, which is neutral, the annexation of large parts of northern France with its industry, an absorption of parts of the Austro-Hungarian Empire and the establishment of a German frontier further to the East. All of this would produce a German-dominated super-state that would reach roughly from Calais to as far east as Kiev.

Could Germany have won the war with the entrance of the United States?

As it happened, the Germans made the conscious decision instead to try to go for another total win by introducing unrestricted submarine warfare in January to February 1917 in an attempt to starve the British out and that was the principal decision that brought the US into the war. Once the US is in the war as well, it's difficult for the Germans to come up with any kind of win; they make a last attempt with their spring offensives after the collapse of Russia, in spring 1918, but these do not succeed.

A man with a mustache, wearing a white shirt and dark suspenders, is seated and pointing his right index finger at a large map or document. He is looking intently at the map. The background is dark, and there is a green leafy wreath on the wall behind him.

What if...
GERMANY HAD WON WWI?

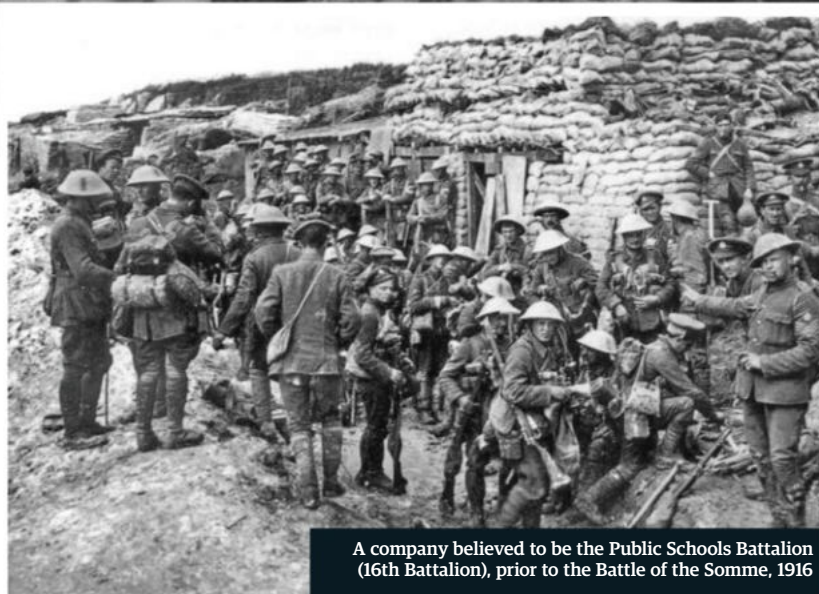
If Germany had won WWI against Britain then Adolf Hitler might not have become a German leader

“What is likely to happen is you get a very strong and dominant Germany that is not quite as bad as Hitler’s Germany”

What if... GERMANY HAD WON WWI?



WWI saw true industrial warfare for the first time in history



A company believed to be the Public Schools Battalion (16th Battalion), prior to the Battle of the Somme, 1916

"We might well have seen a war against that kind of German empire [...] in a manner not too dissimilar to WWII"

What would a German victory in World War I have meant for the United States?

A dominant Germany in Europe does not pose a direct threat to the United States and given the physical distances involved with the Atlantic it is entirely possible that the United States would simply accept this position. President Woodrow Wilson had been re-elected in 1916 on the basis of having kept the United States out of World War I, but when German submarines start sinking American transport ships on the high seas in early 1917, they are compelled to enter the war. So in the short term, the United States might well have taken the view that this was no threat to it. What might then happen half a century on is an open question, but if Germany had developed into the kind of powerful, aggressive state most historians think it would, it's entirely possible it would have challenged in South and Central America, or it might have challenged in the Atlantic or the Pacific [Oceans]. We might well have seen a war against that kind of German empire, going to war with the United States in a manner not too dissimilar to World War II.

How would it be different?

Real timeline



● The Schlieffen Plan

Germany must decide whether to try for an immediate outright victory in western Europe with their Schlieffen Plan, or engage in a longer war with the Allied nations.
September 1914



Real timeline

Alternate timeline

How would Britain have responded?

Even if there is a complete and spectacular German victory in 1914, which is not likely, as people have been trying to make a quick German win with the Schlieffen Plan work perfectly more or less ever since the battle actually took place. Even if that happens and France surrenders as it did in 1914, the imperative for the British to avoid the domination by any one power of Europe is so great that you would get a situation similar to that which the British faced with France under Napoleon a century earlier, that they would just keep rebuilding coalitions against this hostile Germany. And you could envisage that the British could just about mount the equivalent of D-day, taking a British counter-invasion, either of France, Belgium or even the German coastline some time in 1916. So hypothetically you might have seen D-day several decades before it took place.

If the US hadn't entered the war, would they still have grown into the global superpower they are today or would they be more isolated?

The US entry into World War I established its position as an important global power. Indeed, one of the effects of World War I is that the new Soviet Union and the US emerge as non-European powers for the first time, playing a major role in the international system. And the effect of World War II is to establish the domination of those two non-European powers, the US and Soviet Union, with the European powers no longer playing the role they had played recently. This lasts through to the end of the Cold War in 1990 and 1991. Would the US have emerged into its assumption after 1945 of global interests without its involvement in World War I? I would say it's unlikely. If Germany doesn't threaten the US or its interests you're going to see a more isolationist US. If a confident, expansionist, aggressive and militaristic Germany starts to threaten the US, the US would almost certainly respond.

Would the League of Nations and, ultimately, the United Nations still have materialised under a German victory?

No, the League of Nations was very much the ideal of President Woodrow Wilson. And of course the US itself doesn't join the League of Nations, but it is a product of the peace of Paris including the Treaty of Versailles in 1919. What you

would see is something with some kind of form in Europe, an extension of what is known as the Zollverein, the pan-German Customs Union of the 19th century, forming into something which would bear some resemblance to the modern EU but only to the extent that it would be a very large trading block. Its laws, traditions and attitudes towards human rights would have been completely different. But no, with a German victory in WWI, the League of Nations and from it at the end of World War II the United Nations, I don't think there's any way this would happen.

Would Russia still have become the Soviet Union?

Russia had its own problems. It had already had its minor revolution, the uprisings of 1905, leading to political reforms and the creation of a Russian parliament, the Duma. If France is defeated in 1914, Russia probably makes peace with Germany and Austria-Hungary fairly quickly. What basis that will be made on is very hard to say at the moment, but it will almost certainly have been a limited Russian defeat. But what happens after that is not particularly connected with the war; it is the strain of fighting the war over the three-year period that precipitates the Russian political and economic collapse, and without that the idea of a Russian revolution in the way it actually happened is not a certainty.

Do you think World War II would have still happened?

If you got the Germany I've described, that has been successful in World War I and has achieved this kind of domination, who is going to fight it and why? The only thing that works is looking at the British strategy before, against revolutionary and Napoleonic France, where the British kept putting together alliances, kept being defeated and just wouldn't give up until Napoleon was finally defeated, and that war lasted for a quarter of a century. So you could easily envisage the British drawing on the resources of their empire, simply refusing to accept German victory and carrying out a long and persistent war on the peripheries of Europe and around the world to prevent this domination, which could have gone on for decades. Whether Britain could have brought the US in on their side is hard to construct a scenario for, but that depends almost entirely on whether Germany tries to starve Britain into submission by cutting off its supply routes.

Have your say

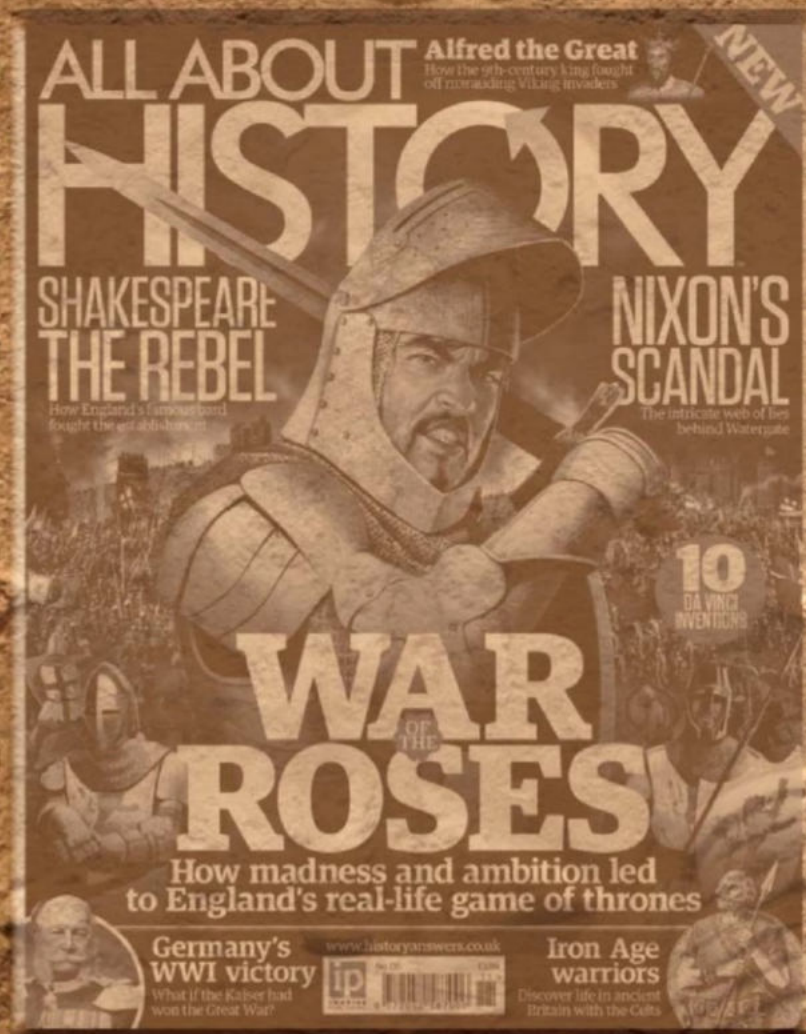
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WAR OF THE ROSES

In war, blood is power, blood is family, blood is everything. England's War of the Roses split a country in two and left the bones of its people scattered across its green and pleasant lands

Written by Robert Jones



It was 1453 and England was still at war with its old enemy France. Since the legendary days of King Henry V, the warrior king who spilled the blood of the noble enemy in spades at Agincourt and secured England's claim to the tactically important province of Normandy, both great western powers had been fighting nonstop, with England slowly but surely being pushed back toward the English Channel. English King Henry VI's military affairs were being overseen by the Duke of Somerset Edmund Beaufort, an experienced military commander who was about to suffer the ignobility of losing Bordeaux and leaving Calais as England's only remaining territory on the continent.

Back in England, Henry VI - shy, pious and noncombatant - was busy being dominated by his powerful and ruthless wife, Margaret of Anjou, the niece of the French King Charles VII, as well as his feuding court nobles, with Henry cow-towing to both and leaving the affairs of England and his estate in a paralysing limbo. Amid this turmoil, a year previously the Duke of York, Richard Plantagenet, had travelled to London with an army to present the court with a list of grievances that they and the king were failing to address. This potentially explosive situation had been handled by Margaret and with the news that she was now pregnant, it helped to re-isolate York and force him to leave the capital with his tail between his legs.





When King Henry VI was told of the final loss of Bordeaux he suffered a mental breakdown. Completely unaware of who he was, what was going on around him and how to act toward people, Henry finally let the last tentative grip of control he had over England slip through his fingers. No longer was Henry the softly spoken and pious king of old, but instead a dazed half-man, stumbling around his home and court, unable to speak cogently and liable to sudden bouts of hysteria and aggressive confusion.

Henry's ethereal grasp on reality would go on to last an entire year. Margaret dealt with him as best she could, shielding him from the circling vultures at court and making all decisions regarding the rule of the nation for him. However, even she couldn't shield him from his own demons, with the king repeatedly heard screaming in the depths of night and continuously stricken with bouts of amnesia. When Margaret eventually gave birth to their son Edward, Henry's mental state was so deteriorated he didn't recognise him. Due

to this incapacity, even his wilful and powerful wife Margaret was unable to stop the return of the Duke of York and his supporters, a group that now included Richard Neville, the Earl of Warwick, one of England's major financial and political powers. A Council of Regency was set up and power taken by Richard as Lord Protector of England. Once installed, he immediately imprisoned his old enemy, the Duke of Somerset, and backed all nobles opposing Henry, shifting the balance of court in his favour. The weak king had seemingly been deposed.

While the king was still alive - even if he was sometimes little more than a gibbering wreck - Richard's position was always perilous and when, on Christmas Day 1454, Henry suddenly and inexplicably regained his senses the balance of power in this game of thrones shifted yet again. The king had gone from not being able to recognise anyone, laughing maniacally on his own to the quiet and shy ruler of old almost overnight. With Henry now recovered, his queen lost no time in challenging York for the throne and quickly re-established Henry and herself at the centre of court. Never one to shy away from a confrontation - and well aware of the danger he presented - the queen began scheming to remove Richard from

his reduced but still influential position, colluding with other nobles to discredit him and undermine his power and influence.

Margaret knew how to work the political system, which relied largely on the noble households. Richard soon found himself increasingly bypassed when it came to decisions, relegated away from London and, harried by Margaret at every turn, he found his allies slipping away. Finally, in early-1455, he decided that enough was enough and anticipating impending arrest for treason, raised an army and marched toward London. By the standards of the military might that was to come, this army of roughly 7,000 men may have been small, but there was nothing small in the statement that it made: the battle lines between the two great noble houses of England and their supporters had been drawn and the country held its breath, preparing to be plunged headfirst into chaos.

Richard Plantagenet was now not just contending for control at court but as the nation's king, and his loyal nobles gathered round him as the leader and figurehead of the House of York. Opposing him directly was Margaret of Anjou and her king, with the former now effectively the leader of the House of Lancaster. While the split in support for the two opposing sides wasn't just

"Completely unaware of who he was [...] Henry finally let the last tentative grip of control he had over England slip through his fingertips"



A depiction of Henry VI with the Dukes of York and Somerset

BATTLE FOR THE THRONE

The key players in the bloody quest for ultimate power



YORK



LANCASTER

The second cadet branch of the parent House of Plantagenet, descended down the male line of the house from Edmund of Langley, the 1st Duke of York and the fourth surviving son of King Edward III. Three of its members down the ages became kings of the country. The house came to an end when Henry Tudor established the

House of Tudor at the close of the Wars of the Roses.
Main supporters: Prince of Wales; Lord of Ireland; Dukes of York, Clarence, Gloucester.
Emblem: A white rose.
Claim to the throne: Richard Plantagenet was descended from King Edward III.

The first of two junior branches of the mighty royal House of Plantagenet, the House of Lancaster was created with the establishment of the Earldom of Lancaster by Henry III of England in 1267. From that date the House of Lancaster provided England with three kings, Henry IV, Henry V and Henry VI before becoming extinct with the

execution of the latter's son, Edward Prince of Wales, by the rival House of York during the Wars of the Roses.
Main supporters: Earls of Lancaster, Leicester, Moray, Ferrers, Derby, Salisbury, Lincoln; Duke of Lancaster
Emblem: A red rose.
Claim to the throne: Its figurehead was Henry VI, the only son of Henry V.

DUKE OF YORK



RICHARD PLANTAGENET

Date of birth: 21 September 1411
Strengths: Powerful and well connected; inherited large estates and influence in England and France.
Weaknesses: A series of military victories led him to overconfidence, ensuring his own death in a crushing defeat at the Battle of Wakefield.

POWER RATING: ⬤ ⬤ ⬤ ⬤ ⬤

KING OF ENGLAND



HENRY VI

Date of birth: 6 December 1421
Strengths: Son of the powerful and popular Henry V; married well to Margaret of Anjou, was generally considered benevolent and pious.
Weaknesses: Bouts of crippling mental illness saw his kingdom ruled by others during his reign for extended periods of time.

POWER RATING: ⬤ ⬤ ⬤ ⬤ ⬤

QUEEN CONSORT



ELIZABETH WOODVILLE

Date of birth: 1437
Strengths: Politically slick; married well above her station and was a renowned beauty
Weaknesses: Not powerful enough to hold the throne for her children; let her power be usurped by Lady Margaret Beaufort in later years.

POWER RATING: ⬤ ⬤ ⬤ ⬤ ⬤

QUEEN CONSORT



MARGARET OF ANJOU

Date of birth: 23 March 1430
Strengths: Passionate, proud and strong-willed, Margaret provided the House of Lancaster the scheming and ruthless ruler Henry VI failed to be.
Weaknesses: Overstepped her power level in the Battle of Tewkesbury, leading to her ultimate fall from grace and power.

POWER RATING: ⬤ ⬤ ⬤ ⬤ ⬤

EARL OF WARWICK



RICHARD NEVILLE

Date of birth: 22 November 1428
Strengths: A principal politician in England, he deposed two kings to earn the nickname 'the Kingmaker'.
Weaknesses: Let his dominant position at the English court be gradually eroded in later years due to directing his focus toward France.

POWER RATING: ⬤ ⬤ ⬤ ⬤ ⬤

DUKE OF SOMERSET



EDMUND BEAUFORT

Date of birth: 1406
Strengths: Head of one of the most influential families in England. Experienced and respected by his peers.
Weaknesses: Poor temperament, lost more battles than he won; let a personal feud with the Duke of York get violently out of hand.

POWER RATING: ⬤ ⬤ ⬤ ⬤ ⬤

TWO HOUSES DIVIDED

Follow the family trees of two historic nobles' houses



HOUSE OF YORK

ANNE DE MORTIMER
1390-1411

The mother of Richard Plantagenet and grandmother of King Edward IV and King Richard III, Anne de Mortimer was descended from royalty through her mother and grandparents. She died of childbirth.

RICHARD OF CONISBURGH
1375-1415

The father of Richard Plantagenet and husband to Anne de Mortimer, Richard of Conisburgh was the 3rd Earl of Cambridge and a prominent figure in the Southampton Plot against Henry V. He was caught and executed.

RICHARD PLANTAGENET
1411-1460

The son of Anne de Mortimer and Richard of Conisburgh, Richard of York became a key Yorkist leader during the early parts of the Wars of the Roses, winning numerous battles and even becoming Lord Protector for a time.

CECILY NEVILLE
1415-1495

The wife of Richard Plantagenet, Cecily Neville was the Duchess of York and was well known for her beauty and piety. She gave birth to two later kings of England, Edward IV and Richard III. She outlived her husband by 35 years.



RICHARD III
1452-1485

King of England for just two years, Richard III was the last king from the House of York and the last of the House of Plantagenet. Richard was famously defeated by Henry Tudor at the Battle of Bosworth Field.

EDWARD IV
1442-1483

The first Yorkist king of England, Edward IV ruled the country in two spells, from 1461 to 1470 and then after an overthrow and subsequent restoration, from 1471 to 1483. He was succeeded by his younger brother Richard III.

ELIZABETH WOODVILLE
1437-1492

Spouse of King Edward IV from 1464, Elizabeth Woodville was one of the most powerful women in England during the Wars of the Roses. She gave birth to the Princes in the Tower and Elizabeth of York, future wife of Henry Tudor, King Henry VII of England.

EDWARD V
1470-1483

One of the famous Princes in the Tower, Edward V was a son of Elizabeth Woodville and uncrowned king for just 86 days. He was succeeded infamously by his uncle and Lord Protector, Richard of Gloucester, later King Richard III of England.

RICHARD OF SHREWSBURY
1473-1483

The second son of Elizabeth Woodville and King Edward IV, Richard was the second famous member of the Princes in the Tower. Richard was almost certainly murdered along with Edward and disposed of in secret.

ELIZABETH OF YORK
1466-1503

The only daughter of Elizabeth Woodville, Elizabeth of York played a key part in ending the Wars of the Roses, marrying the Lancastrian ally Henry Tudor on 18 January 1486, establishing the Tudor Dynasty.

OWEN TUDOR
1385-1461

A Welsh soldier and courtier, Owen Tudor was descended from a Welsh prince, Rhys ap Gruffudd. After fighting at Agincourt he was awarded English rights and went on to serve in the household of Catherine of Valois after Henry V's death. They were possibly married in secret in 1429.

CATHERINE OF VALOIS
1401-1437

Queen consort of England from 1420 to 1422, Catherine of Valois was the daughter of Charles VI of France. She was married to Henry V in 1420. In December 1421, she gave birth to the future Henry VI. Later, after Henry V's death, she went on to form a relationship with Owen Tudor.

HENRY V
1386-1422

The famous warrior king of England who scored a famous victory over the French at the Battle of Agincourt, Henry V was the second English monarch to stem from the House of Lancaster after his father, King Henry IV.

HENRY VI
1421-1471

Henry VI was the third king from the House of Lancaster. He became king at just nine months old. He suffered from periods of madness throughout his life and was deposed by Edward IV and the House of York.

MARGARET OF ANJOU
1430-1482

The wife of Henry VI, Margaret of Anjou was the niece of Charles VII. Widely held to be responsible for the Wars of the Roses after excluding the Duke of York from the Great Council in 1455.

EDWARD OF LANCASTER
1453-1471

The only child of Henry VI and Margaret of Anjou. After the battle of Towton he was exiled in France with his mother. He was killed in battle in Tewkesbury.

EDMUND TUDOR
1431-1456

Edmund Tudor was the first son of Owen Tudor and Catherine of Valois. Henry VI made him the Earl of Richmond in 1452. He married Margaret Beaufort in 1455.

MARGARET BEAUFORT
1443-1509

Margaret Beaufort was the daughter of the Duke of Somerset and the great-great granddaughter of King Edward III. She gave birth to the future Henry VII at just 13 years old.

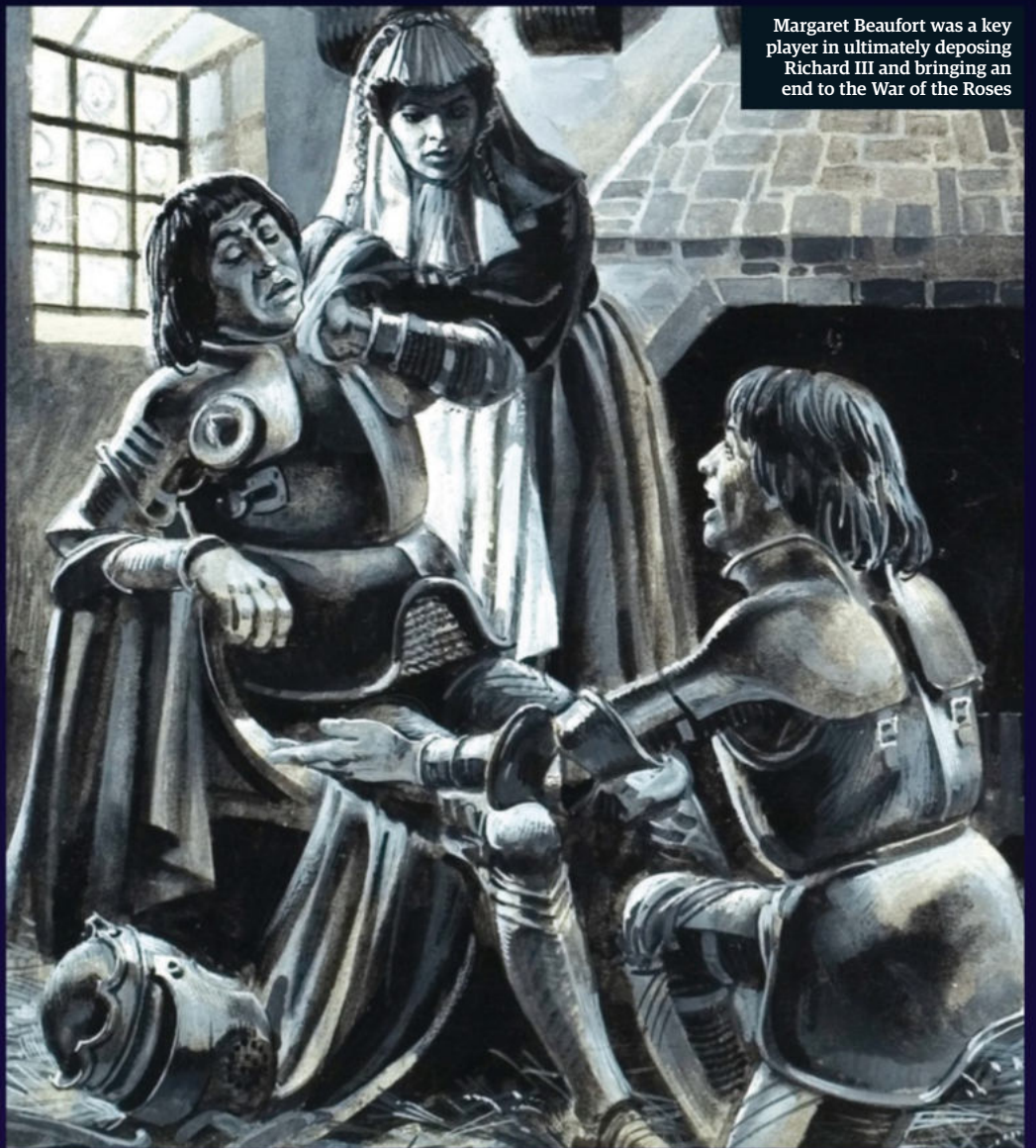
HENRY VII
1457-1509

The only child of Edmund Tudor and Margaret Beaufort, Henry VII spent years in exile before defeating Richard III at the Battle of Bosworth. He married Elizabeth of York, thus uniting the Houses of York and Lancaster, ending the Wars of the Roses.



Edward V and Richard of Shrewsbury (the Princes in the Tower) were imprisoned in the Tower of London and most probably executed





Margaret Beaufort was a key player in ultimately deposing Richard III and bringing an end to the War of the Roses

decided by geography, with nobles from all parts of the country siding with one house or the other due to a series of complex and often long-standing allegiances, although with Richard marching down from the north where he had recruited much of his army, it seemed like the north was coming to claim what it believed was rightfully its property in the south. To many of the nobles supporting the House of York they were marching on the capital with their knights, infantrymen and archers to remove a weak king from power and restore order to a country on the verge of disintegration and collapse.

Even the staunchest of Henry VI's supporters would have been forced to admit the country had seen better days. Following a series of French victories over the English on the continent, they had grown confident and had begun raiding English supply lines and vessels in the Channel. In addition, due to the years of warfare England was in poor financial shape, while the absence of a strong king had led to London's political scene descending into a series of arguments, squabbles and petty confrontations. A weakened country was slowly bleeding to death from infighting, so in marching on the capital Richard Plantagenet intended to wrestle back some semblance of control over it.

The king might have been largely blind to the threat of the Duke of York but, luckily for the House of Lancaster, the ever-vigilant and ruthless Margaret was not. She quickly drummed up support for a hastily assembled army to counter the threat from Richard's forces. Margaret dispatched this army under the command of her favourite and a sworn enemy of Richard, Edmund, Duke of Somerset. The king was

"Richard Plantagenet was now not just a contender for control of England but also its kingship, as the leader and figurehead of the House of York"

also sent along with the army and, judging by the comparatively small size of the Lancastrian army (roughly 2,000 men), it seemed Margaret expected that there would be no hostilities, with some sort of peace treaty the likely outcome and the status quo maintained. The beautiful and resourceful queen was wrong, though. Spectacularly so.

The two armies came together at St Albans just north of London on 22 May 1455, and after a couple of minor skirmishes, the first battle of the War of the Roses broke out. Richard's Yorkist force quickly cut down the Duke of Somerset as well as Lancastrian loyal nobles

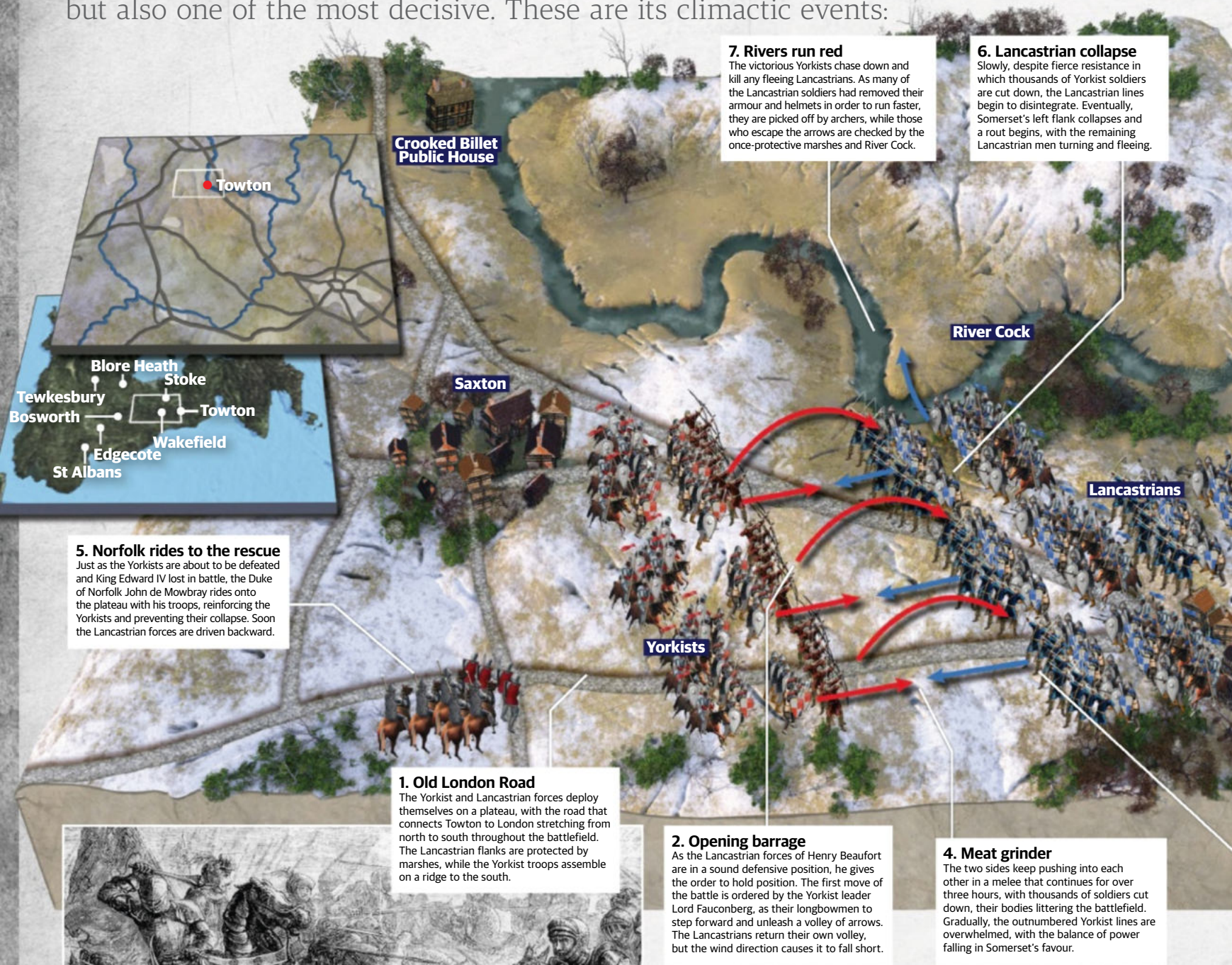
Henry Percy, Earl of Northumberland and Lord Thomas Clifford. Turning a defeat into a catastrophe, Henry VI himself was also captured, personally apprehended by Richard's key ally Warwick's forces as he hid in a local tanner's shop, abandoned by his advisers and servants and seemingly suffering from yet another mental breakdown.

The following day, York and Warwick marched with the now-mad-again king in their custody to London. Redepositing the unfortunate Henry with Margaret, Richard retook the position of Lord Protector and he and Warwick began to re-establish themselves. An uneasy truce of sorts

Margaret was first married to the Duke of Suffolk's son, John de la Pole, in 1444, then only a year old

THE BLOODIEST BATTLE: TOWTON

Towton was not only the most brutal battle of the War of the Roses but also one of the most decisive. These are its climactic events:



"Edward joined forces once more with his father's old ally, 'the Kingmaker' Warwick, and rode forth toward the north armed with a deadly army of over 30,000 men"

LANCASTER

Troops: 35,000
Losses: Unknown
 (Total dead across both armies: 28,000)

Leader: Henry VI
Strengths: Strong claim to the throne of England, being the only child to King Henry V.
Weaknesses: Periods of debilitating insanity. Also quiet, shy and unsuited to warfare.

Key supporter: Duke of Somerset
Strengths: Experienced military commander with steady judgement.
Weaknesses: Political amateur; had a habit for switching sides.

Secondary unit: Footsoldier
Strengths: Numerous and gritty fighters when on the battlefield.
Weaknesses: Not always well trained or equipped enough.

YORK

Troops: 30,000
Losses: Unknown
 (Total dead across both armies: 28,000)

Leader: Edward IV of England
Strengths: Extremely capable and daring military leader. Good fighter on the battlefield.
Weaknesses: Poor foresight and inconsistent political judgement.

Key supporter: Lord Fauconberg
Strengths: Established military commander and knight. Politically savvy.
Weaknesses: Disloyal and mercenary.

Secondary unit: Longbowmen
Strengths: Fabulous range and stopping power with armour-piercing arrows.
Weaknesses: Vulnerable in melee combat and ineffective in poor visibility conditions.

8. Henry flees

Somerset as well as a few other surviving Lancastrian nobles manage to escape the battlefield and news of the defeat is sent to Henry VI. He flees straight away to Scotland with his wife Margaret of Anjou where he is joined by Somerset.

Towton

3. Lancastrian charge

Under assault by Yorkist arrows, Somerset orders his troops to charge up the hill. Advancing through a rain of arrows, the Lancastrians lose many men, but reach the Yorkist lines and engage them in melee combat, cutting down hundreds of soldiers.

followed, with both sides plotting to overthrow the other but failing to act decisively. Warwick became captain of Calais – an important and powerful position – but once again Henry VI recovered his mental strength and took his royal progress (a tour) into the Midlands in 1456, establishing his court in Coventry. By this point, the country effectively had two different kings, an unsustainable state of affairs. In this court, the third Duke of Somerset, Henry Beaufort was emerging as the favourite, with plans struck by him and Margaret to roll back all the appointments York had made while Lord Protector and to degrade Warwick's influence on state affairs. The situation was balancing on a knife's edge; one sudden move, one perceived threat, and the whole country would rapidly descend into all-out civil war.

It took three years, but that the peace would end was as inevitable as the sun rising in the morning and setting in the evening. The move that would shatter the precarious peace came in 1459, when York and Warwick were summoned to a royal council in Coventry by Henry VI and Margaret and, fearing foul play and a potential threat to their lives, refused to go, instead grouping together with their supporters at Ludlow Castle. This was the starting pistol for the beginning of the bloodiest civil war England had ever seen. The Battle of Blore Heath was first, then the Battle of Ludford Bridge, followed by the Battle of Northampton and Wakefield. Each new bloody confrontation saw thousands of men smash into each other, each thrust with a dagger or a sword that hit home a blow to the heart of the House of Lancaster or York. The balance of power shifted

THE MANY WARS OF THE ROSES

30 years of conflict mapped out on a bloody land

St Albans 22 May 1455

St Albans saw Richard of York lead a force of over 3,000 soldiers on a direct course for London to take down Henry VI. Henry rode out to meet the Yorkist army and took up a defensive position at St Albans. Richard attacked the city with a great fury and defeated Henry. Queen Margaret and her young son Edward were forced into exile.

Blore Heath

23 September 1459

Despite scoring a victory at St Albans, Richard's advance to London was halted. The Wars of the Roses rekindled themselves four years later when Richard, fearing his campaign was losing momentum, decided to centralise his forces around the town of Ludlow and launch a massive assault on the Lancastrians. Queen Margaret heard of the movement and dispatched her loyal Lord Audley to intercept. Despite Audley having roughly twice as many soldiers, he lost the battle and his life.

Wakefield 30 December 1460

With a large countering army assembled by the Lancastrians near the city of York, Richard took his forces north along with Richard Neville, Earl of Salisbury to intercept. Richard took a defensive position at Sandal Castle due to Lancastrians sporting a force close to 20,000, while his own forces numbered only around 10,000. Despite taking Sandal however, Richard decided to ride out and meet the Lancastrian forces directly. He was eventually overwhelmed

and killed in battle. Richard Neville and Richard's son are executed.

Towton 29 March 1461

A vast Yorkist force numbering 30,000 men fought the elements and a 35,000-strong force of Lancastrians at Towton. After hours of bloody fighting the Duke of Norfolk arrived with reinforcements at the last moment and the Yorkists won the day.

Edgecote Moor 26 July 1469

Eight years on from the bloody battle of Towton, in which Edward IV had ruled unopposed, an army sent to put down an uprising was attacked by Lancastrian forces and quickly defeated, with the Earls of Pembroke and Devon killed.

Tewkesbury 4 May 1471

The Lancastrian forces of the 4th Duke of Somerset, Edmund Beaufort, plotted a course for Wales. King Edward IV heard of the move and sent an army to intercept. The two sides met at Tewkesbury and, after Somerset attempted a failed break of the Yorkist lines and was countered, the Lancastrian

force was routed, the Prince of Wales killed in battle, Somerset executed and Queen Margaret of Anjou captured.

Bosworth 22 August 1485

Richard III had succeeded Edward IV as king. Henry Tudor had other ideas and landed in Wales on 7 August 1485 to take the crown. Richard heard of the invasion and moved to intercept Henry, the two forces eventually meeting south of Bosworth. During the ensuing battle Lord Thomas Stanley and Sir William Stanley switched sides from the Yorkists to the Lancastrians. As a result, Richard III was killed and Henry became King Henry VII.

Stoke 16 June 1487

The last battle of the War of the Roses, Stoke was a final, wild roll of the dice for the remaining Yorkist forces. Bolstered by German and Irish mercenaries, Yorkist troops started to march toward London, but were met at East Stoke and obliterated. Its leaders were captured and imprisoned, its men killed and the last remnants of the Yorkist faction destroyed.



The War of the Roses pitted Yorkists against Lancastrians for over three decades

WAR OF THE ROSES IN POPULAR CULTURE

How has literature and film portrayed the events?

One of our main sources for information in popular culture on the War of the Roses is William Shakespeare's *Henry VI* trilogy, which charts the political machinations, fights and jealousies that tore the English political system apart in the mid-15th century. Indeed, the current name for the series of battles – War of the Roses – actually stems from Act 2, Scene 4 of the work, where the bickering lords are asked to show their allegiance to either Richard Duke of York or the rival Duke of Somerset by selecting either a red or white rose from a garden. This scene, despite its dubious historical accuracy – historians think it never took place – was later seized on by Sir Walter Scott and popularised through his work *Anne of Geierstein*. The name, 'Wars of the Roses', therefore stuck and has proceeded to be used to describe the conflict since. Up until this point, the conflict had instead simply been referred to as the 'civil war'.



The historically apocryphal scene from Shakespeare's *Henry VI* where supporters of the Yorkists and Lancastrians pick either a red or white rose to show their allegiance



The Battle of Tewkesbury, one of the decisive battles of the War of the Roses

fluidly from one house to the other, but sometimes into nothingness, with no real victor or controlling stake identifiable.

These battles didn't just see commoners cut down in their thousands; for Richard Plantagenet, the Duke of York, Wakefield would be his final resting place. Decades of warfare had finally caught up with him. With Richard slain in battle and his second son Edmund and ally Richard of Salisbury captured and executed, Wakefield was one of the largest Lancastrian victories of the War of the Roses and a boon for the ageing but powerful Margaret of Anjou. Following Wakefield,

the House of Lancaster pressed on, with their army returning south, outmanoeuvring Warwick's Yorkist army and defeating them at the Second Battle of St Albans. By now, all seemed to be lost for the House of York.

With Richard Plantagenet dead and the Earl of Warwick having suffered a bad defeat, the House of York desperately needed a figurehead to rally around and so Richard's first son, Edward of March, stepped into the breach. He had already defeated Jasper Tudor's Lancastrian army at the Battle of Mortimer's Cross in Herefordshire and, hearing of Warwick's defeat, joined his

father's ally. The two of them and their armies then made a beeline for the capital. Margaret and Henry VI were not in London, as they were travelling northward, so the Yorkists entered the city unopposed and to a rapturous welcome. The welcome was so enthusiastic because Henry VI's incompetence as king had seen popular opinion sway in Edward's favour and the common people had seemingly had enough of being under Lancastrian ruler.

Such was the anti-Lancastrian mood that not only did Edward receive huge support from all the Yorkist nobles around the city but he was unofficially crowned king in an impromptu ceremony held at Westminster Abbey. Edward knew though that while he had enjoyed the ceremony, he would never truly be king until Henry VI and Margaret of Anjou had been disposed of. Vowing to Parliament that he would

"Importantly though, while Margaret and the House of Lancaster were down for the count, they were not down and out"

not have a formal coronation until all pretenders to the throne had been crushed, he joined forces once more with his father's old ally, the 'Kingmaker', Warwick. Together they rode forth toward the north, leading a deadly army of over 30,000 men; their mission to take a proverbial hammer to the House of Lancaster and cut the head off its talisman.

This already large army grew even more along the way, with more men and nobles drawn to Edward's cause as he marched toward Henry VI and Margaret, as he headed straight toward what was to be one of the bloodiest and most decisive battles in the entirety of the War of the Roses. Edward and his army was finally met by the House of Lancaster's great military commander Henry Beaufort, third Duke of Somerset, south of York at the village of Towton. Margaret had dispatched Somerset to put down the son of her old nemesis Richard Plantagenet once and for all. Beaufort turned up to the killing fields of

Towton with an army of 35,000 soldiers just as the snow began to fall from the sky and settle on the ground.

When the screams and the drums of war had died away, but the blood still startlingly vivid against the white snow, England had a new king. The House of York had emerged triumphant and Henry VI and Margaret of Anjou had been forced to flee to Scotland. Edward was officially crowned the new king of England in June the same year and slowly, one by one, the remaining pockets of Lancastrian soldiers were hunted down, either killed or forced to leave England. Margaret orchestrated an attack on Carlisle later that year but due to lack of financial power and men at arms, her advance was repulsed by Edward's Yorkist forces. Her loyal Duke of Somerset was later defeated and executed at the Battle of Hexham and her husband, Henry VI was captured and imprisoned yet again. This time he was held at the notorious Tower of London.

Bankrupt and no longer in command of any military support, Margaret had only one option left open to her - to return to France with her son. Setting sail from Scotland in mid-1465, Margaret of Anjou, once queen of England and leader of the House of Lancaster, was down for the count. Her position in England lay in ruin and her dream to see her son Edward of Lancaster crowned king was crushed. Importantly though, while Margaret and the House of Lancaster were down for the count, they were not down and out.

The following years of exile did nothing to dampen Margaret's ambitions as she would continue her plotting and scheming to take back the English throne like never before. In an audacious political move, she struck a deal with her former enemy, 'the Kingmaker' Earl of Warwick in an attempt to re-establish her previous control of England. While her husband Henry VI would lose his life in the Tower of London and Yorkist Edward IV would go on to be king along with his younger brother Richard III, by the time the fighting ceased in the climactic Battle of Bosworth Field in 1485 and the curtain on the War of the Roses was brought down, it was the Henry Tudor who would win the game of thrones and become king of England.

The story of Henry Tudor's rise to the kingship of England, 20 years after Margaret's exile, and his subsequent founding of the historic Tudor dynasty is a story for another day. Tudor's meteoric elevation dominated the last years of the Wars of the Roses and his ultimate victory was far from a certainty, with history painting a tale more at home with the concepts of luck and chance rather than those of divine right and might. For that was, in the end, the real truism of England's War of the Roses - that all is fair in love and war and that blood is everything.

Richard III at the Battle of Bosworth, the final battle of the War of the Roses



The crowning of Henry VII, who would establish the Tudor dynasty

ENGLAND'S GAME OF THRONES

Follow our comprehensive timeline of the key events that decided the outcome in the Wars of the Roses



Henry VI is born

The son of warrior king Henry V and Catherine de Valois, Henry VI was crowned king of both England and France during infancy. He would proceed to oversee England's final losses in the Hundred Years' War and famously married the strong and powerful Margaret of Anjou.
6 December 1421

Battle of Losecote Field

Edward IV raises a new army and attacks Lancastrian troops at Empingham, winning well.
12 March 1470



The Kingmaker exits

The final curtain for 'the Kingmaker', Barnet sees Warwick die at the hand of Yorkist forces of Edward IV.
14 April 1471

Henry VI dies

After a period of incarceration in the Tower of London, it is reported that Henry VI has died. Edward VI is suspected to have ordered his death mere hours before he himself was re-crowned as king.
21 May 1471

Margaret of Anjou is finally defeated 1475

After spending most of her life caring for her son Edward in an attempt to ensure his succession to the throne of England, his death at the Battle of Tewkesbury is the final blow to the once-powerful queen. With her spirit broken she is exiled back to France, where she spends the remainder of her life living as a poor relation of the French king.

The Kingmaker

Richard Neville, Earl of Warwick was one of the most powerful figures in the entire war, personally overseeing the deposition of two kings is born. He was killed at the Battle of Barnet.
22 November 1428

Margaret of Anjou is born

One of the key players in the Wars of the Roses, Margaret of Anjou, the future wife of King Henry VI, is born to René d'Anjou, Duke of Anjou and Isabel de Lorraine.
23 March 1430

Jasper Tudor is born

Son of legendary Welsh warrior Owen Tudor, who fought alongside Henry V at Agincourt, he would become a commander and play an important role in establishing Henry Tudor as king.
1431

The Battle of Edgecote Moor

After raising an army to put down an uprising in Yorkshire, King Edward IV's forces are intercepted by a Lancastrian one and defeated by Robin of Redesdale.
26 July 1469

Elizabeth of York is born

Elizabeth Woodville and Edward IV's only daughter to be born, Elizabeth of York would proceed to be queen consort of England under Henry VII. She is the Yorkist partner in the eventual joining of houses at the end of the Wars of the Roses.
11 February 1466

The end of Somerset

The final battle of the experienced Lancastrian commander, the Duke of Somerset, Hexham saw a large Yorkist victory and Somerset's capture and execution.
15 May 1464

Henry VI is restored to the throne

After been alienated and shunned by his old ally Edward IV, the Earl of Warwick strikes a deal with Margaret of Anjou to defeat the Yorkist king. 'The Kingmaker' restores Henry VI to the throne.
30 October 1470



Edward IV dies at 40

After over a decade of successful rule as the king of England in two spells, Edward IV dies suddenly and unexpectedly, throwing the country back into political turmoil. His heir, Edward V, is only 12 years old at the time of his father's death.
9 April 1483

The Princes in the Tower die 1483

The only two sons alive at the time of their father's death Edward IV, Edward V of England and Richard of Shrewsbury are famously incarcerated in the Tower of London during their youth and then mysteriously disappear, likely killed to remove any possibility of them taking the throne at a future point. Who ordered the deaths is not known.



Future Yorkist king of England

Edward is the first son of Richard Plantagenet and Cicely Neville. Following his father's death at the Battle of Wakefield, Edward would famously join forces with his father's old ally, the Earl of Warwick ('the Kingmaker') and take the crown for himself in bloody warfare. He marries the politically savvy Elizabeth Woodville.

28 April 1442



Margaret takes back power

Following Henry VI's miraculous Christmas Day recovery from his madness, his wife Margaret of Anjou wastes no time in reinstating the king as the court's top power and pushes Richard out of the capital.

February 1455



Warwick becomes captain of Calais

Richard Neville, Earl of Warwick, becomes the captain of Calais, a powerful financial and military position that leads him into his apex of power, heavily controlling the affairs not just of England but of parts of France too.

1455

Margaret Beaufort is born

The future mother of King Henry VII is born at Bletsoe Castle, Bedfordshire, England. She would become the influential matriarch that sees the rise and establishment of the Tudor Dynasty.

31 May 1443

Richard marches on London

Disaffected with a list of grievances, Richard of York marches to London from Ireland, demanding Edmund Beaufort, the Duke of Somerset, to be removed from office due to perceived failures. He is not supported at court, however, and returns a year later empty-handed.

1452

York is Lord Protector

After Henry VI's first mental breakdown, Richard of York returns to London and is named Lord Protector. York imprisons the Duke of Somerset in the Tower of London and forges his legendary warring relationship with Margaret of Anjou.

27 March 1453

The French defeat the English at Castillon

Following the disastrous Battle of Castillon, where French forces bring down the Hundred Years' War with a decisive victory over the English, Henry VI is told of the news and has his first mental breakdown.

17 July 1453

First Battle of St Albans

The opening battle of the Wars of the Roses. St Albans is a small and scrappy battle but still leads to the death of three Lancastrian nobles.

22 May 1455

Hostilities resume

After years of strained peace, hostilities break out again, with Richard Neville scoring a victory against a numerically superior foe.

23 September 1459

The Battle of Ludford Bridge

Following a victory at Blore Heath Yorkist supporters regroup at Ludford. However, a large army led by Henry VI arrives and many of the Yorkists flee.

12 October 1459

House of York gain the upper hand

An interesting battle due to the Lancastrian Lord Edmund Grey switching side to the Yorkists mid-battle. The Yorkists won easily and gained the upper hand in the Wars.

10 July 1460

Act of Accord signed

As a compromise, it is agreed that Richard of York is the rightful successor to the throne after Henry VI. This deal excludes Henry's son, Edward of Lancaster, from the throne, angering Margaret of Anjou.

October 1460

Battle of Wakefield

The last battle for Richard Plantagenet, Duke of York. Riding out from a defensive position at Sandal Castle, Richard is killed by Lancastrian forces.

30 December 1460



Battle of Hedgeley Moor

The brother of 'the Kingmaker' Warwick, John Neville, clashes with a Lancastrian force on his way to the border of Scotland to arrange a peace treaty.

25 April 1464

Edward's popular coronation

After clearing a path to the throne with a hard-fought victory at the Battle of Towton, Edward of York is crowned king in an official coronation in London. The coronation is well received by the public.

28 June 1461

The bloodiest battle

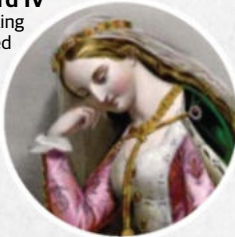
The most brutal battle of the Wars of the Roses, this clash sees almost 30,000 men die in driving snow near the village of Towton, Yorkshire.

29 March 1461

Elizabeth Woodville marries King Edward IV

Coming from a low-ranking family, Woodville is called 'the most beautiful woman in the Island of Britain' and she uses this trait to marry advantageously, walking down the aisle with King Edward IV.

1 May 1464



Battle of Ferrybridge

A small, precursory skirmish before the decisive and bloody Battle of Towton, Ferrybridge sees the Yorkist leader Lord Fitzwalter killed in action.

28 March 1461

Second Battle of St. Albans

The follow-up battle to the one that kickstarted the Wars of the Roses, this time there are more men, more deaths and, importantly, a Lancastrian victory.

17 February 1461

Lancastrian army routed

Following his father's defeat at Wakefield, Richard's son Edward routs a Lancastrian army under the leadership of Jasper Tudor.

2 February 1461

Act of Accord signed

As a compromise, it is agreed that Richard of York is the rightful successor to the throne after Henry VI. This deal excludes Henry's son, Edward of Lancaster, from the throne, angering Margaret of Anjou.

October 1460

Richard becomes king

Despite simply being named as Lord Protector by Edward IV, Richard III is crowned king after the infamous affair of the princes in the Tower.

6 July 1483

Buckingham revolts

Richard's ascension is immensely contentious and uprisings take place. One of the largest is a rebellion orchestrated by Henry Stafford, Duke of Buckingham, who is especially disaffected. His rebellion fails, however.

18 October 1483



The king's mother arrives at courts

Following her son Henry's victory at the Battle of Bosworth Field, Henry's mother Margaret Beaufort arrives at court and creates a new title for herself; 'My Lady the King's Mother', ensuring herself legal and social independence.

1485

Henry unites the Houses

18 January 1486

In his marriage to Elizabeth of York, the only daughter of Elizabeth Woodville, Henry VII finally unites the remnants of the two warring Houses of York and Lancaster. The product of this marriage marks the beginning of the House of Tudor and the Tudor Dynasty, which would go on to rule England until 24 March 1603.

Anne Neville dies

The wife of embattled king Richard III dies of what is now believed to be tuberculosis, at Westminster, London. There is an eclipse on the same day, which people see as an omen depicting the impending fall of Richard.

16 March 1485



Battle of Bosworth 22 August 1485

The decisive and climactic battle of the War of the Roses. The Battle of Bosworth sees the Yorkist king Richard III killed in combat, his 10,000-strong force routed and his enemy, the young and charismatic Henry Tudor, carve a direct path to the throne of England. He would be crowned King Henry VII months later.

The War of the Roses end 16 June 1487

Finally, after more than 30 years of turmoil, chaos, warfare, infighting, backstabbing, side-changing, murdering, scheming and plotting, the War of the Roses end with Henry Tudor quashing the last remaining threat to his throne at the Battle of Stoke. Henry proceeds to rule successfully for over 20 years, despite a couple of minor threats to his throne.



Nixon's Scandal

WATERGATE

The events that brought down a US president
and changed the political lexicon forever

Written by Robin Brown

With beads of sweat forming at his brow, the president of the United States of America looks straight down the lens of a television camera and says defiantly: "I'm not a crook." The president, Richard Nixon, is in the middle of an hour-long televised question-and-answer session with over 400 journalists. That the leader of the world's foremost superpower is forced to make such an astonishing statement shows the scale of a scandal that has spread like wildfire through the White House. It will lead to the first and only resignation of an incumbent president to date and become the defining political misdemeanour of the 20th century.

So seismic is Watergate that the last syllable will be added as a suffix to any public series of events deemed scandalous, yet the origins are seemingly small-fry in comparison to many political controversies - a burglary at the Watergate Hotel, the site of the Democratic National Committee.

At the time Richard Nixon delivers the quote, late in 1973, the walls are beginning to close around him, yet it will take almost another year for the president to tender his resignation following a 'death by a thousand cuts' that sees allies and aides resigning or cast ruthlessly aside. Days before Nixon resigns, beleaguered and facing impeachment, he consults an old colleague, Henry Kissinger, on his options. Seeing a broken man in torment at the prospect of only the second presidential impeachment and a potential criminal trial, Kissinger tries to console Nixon and even accedes to his request that the pair of them get down on their knees and pray. That it has come to this is an indication of the devastating nature of the revelations over a dirty-tricks campaign that struck at the heart of the White House.

18 months earlier, on 17 June 1972, five men had been arrested by police on the sixth floor of the Watergate Hotel building in Washington, DC. Noticing that a number of doors have been taped open to prevent them from locking,

a security guard called the police. All five were arrested and found to have connections with the CIA and a group that raised funds for the re-election of Richard Nixon, the Committee for the Re-Election of the President (CRP), often satirically abbreviated to CREEP.

Nixon is a familiar face, having been a vice president to Dwight Eisenhower between 1952 and 1960 and previously unsuccessfully fighting John F Kennedy for the White House. During a debate, the future president falls foul of a relatively new medium in political campaigning - while voters listening on the radio believe that Nixon has triumphed, television viewers are won over by JFK's good looks and charm; they are equally dismayed by Nixon's hunched shoulders, jowly appearance and sweaty brow. But, having narrowly won the presidency in 1968, Nixon wins by a landslide in 1972 and enjoys approval ratings of more than 70 per cent - almost unheard of for a president in his second term.

However, Nixon deploys an array of dubious techniques to smear opponents. The CRP becomes a de facto intelligence organisation engaged in dirty campaigns against potential rivals: bugging offices, seeking material that could be used against opponents and attempting to prevent leaks to the media. While the CRP is technically and officially a private fundraising group, its existence and true nature is known to several federal government employees and Nixon himself - while he is aware that the CRP gathers intelligence on his rivals and administration's enemies, conversations reveal that he is either unaware of the scale of their activities or simply chooses not to know.

The five men arrested at the Watergate were likely there either to recover bugs that had been left on the telephone of senior Democrats or install new surveillance equipment but originally little significance is ascribed to the break-in. When the *Washington Post's* rookie reporter Bob Woodward is sent to a local courthouse to cover the story, he discovers that the

WHY WATERGATE?

The motive behind the biggest political scandal of the 20th century

The reason the Watergate burglaries remained shrouded in mystery for decades was the conflicting reports from the various parties involved. Certainly, those involved in the burglaries – including prominent members of the White House Plumbers, a covert intelligence group acting with the tacit approval of Nixon – were working on behalf of Nixon, whether the president was aware of the specific activities or not. That Nixon learned about Watergate and sought a cover-up is beyond dispute.

Various sources indicate that government agencies believed that the Cuban government – one of USA's greatest ideological foes of the time – was funding the rival Democratic Party or that people in the upper echelons of government were keen to smear or bug

Democratic bigwigs or retrieve previously installed wires. What may have begun as an attempt to prevent classified documents being leaked to the press degenerated into a dirty-tricks campaign against political opponents that was as widespread as it was inept.

No definitive motive has ever come to light, with even those involved seemingly evasive or confused – perhaps due to the passage of time, the desire to paint their own motives as righteous or contemporaneous misinformation – over the true motive behind the biggest US political scandal of the 20th century. Perhaps the old maxim about absolute power rings truest here, where 'The President's Men' ordered the burglary and the president approved the cover-up simply because they could.

five men are no ordinary burglars, being found with unusually advanced bugging equipment and a surprisingly high-powered attorney. One of the men, James McCord, admits that he has previously worked for the CIA – Woodward connects him to E Howard Hunt and Charles Colson using phone books belonging to the men. Colson will claim that upon hearing of the arrests the day after they took place, Nixon hurled an ashtray at the wall in fury.

Hunt is another CIA operative with a colourful background – he had once been accused of involvement in the assassination of JFK; anecdotal evidence implies he may have been in Dallas at the time of the killing – and at the time was working for the White House Plumbers, a shadowy group that worked to prevent classified information being leaked to the media from the Nixon administration.

While the existence of the Plumbers – comprising a heady mix of CIA operatives, Republican aides and assorted security personnel – is known to Nixon, the extent of their activities is initially kept from him by senior staff. The group had come into existence from a desire to punish and undermine the Republicans' enemies – a memo from 1971 suggested the group use any federal machinery "to screw our political enemies" – but the line between what constitutes enemies of America, the Nixon administration and the Republican Party becomes hopelessly blurred. Colson is a special counsel, essentially a lawyer, and Woodward realises that he, unlike Hunt, is a genuine link between the Watergate burglary and upper echelons of the White House.

In 1972, Woodward is teamed with another reporter, Carl Bernstein, and the pair is urged to develop the story by the *Post's* executive editor. Woodward contacts an FBI source he has previously used, and using an elaborate system of signals and instructions he is told that the scandal originates in the White House. The source is referred to as Deep Throat.

When Hunt, G Gordon Liddy and the five burglars are indicted on federal charges relating to the burglary, Hunt demands money from the CRP and White House to support the seven's legal fees – essentially hush money. They are all convicted in early-1973 and given stiff sentences, reflecting Judge John Sirica's belief that the men are lying about their external help. The president announces that a full investigation has occurred and found no evidence of



The journalists Bob Woodward (left) and Carl Bernstein – their investigation was key to exposing Nixon

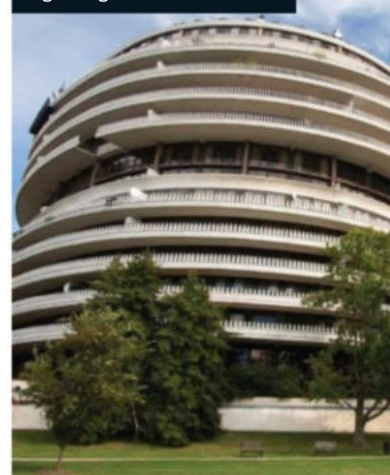
wrongdoing – while in fact no investigation has taken place. In his announcement, Nixon says: "I can say categorically that his investigation indicates that no one on the White House staff, no one in this administration, presently employed, was involved in this very bizarre incident. What really hurts in matters of this sort is not the fact that they occur, because overzealous people in campaigns do things that are wrong. What really hurts is if you try to cover it up."

The words will prove to be prescient. Payments to the jailed men create a paper trail that implicates senior figures in the administration. Woodward deduces that the chief of staff, HR Haldeman and Attorney General John Mitchell are also implicated. Deep Throat claims the Watergate break-in was masterminded by Haldeman and also states that the lives of the two reporters may be in jeopardy: Woodward and Bernstein press on regardless and write a book, *All The President's Men*, later turned into a film, about their experience of the scandal.



The Select Senate Committee on Presidential Campaign Activities opened its investigation into the Watergate scandal on 17 May, 1973

The Watergate Hotel, the beginning of the end for Nixon





“Nixon is a suspicious individual and sees conspiracies against him everywhere”



The accused Watergate burglars and their lawyer, 9 January, 1973

TIMELINE OF A SCANDAL

17 March 1973

Watergate burglar James McCord writes a letter to Judge John Sirica, claiming that he lied during trial and that the burglary had involved other government officials.

13 July 1973

Alexander Butterfield, a former presidential secretary, reveals that all conversations and telephone calls in White House offices have been covertly taped since 1971.

24 July 1974

Nixon is ordered to hand over tapes to investigators. Congress begins impeachment proceedings.



1 January 1975

John N. Mitchell, John Ehrlichman and H. R. Haldeman are convicted of conspiracy, obstruction of justice and perjury. All three serve prison sentences.



1972

17 June 1972

The White House Plumbers are arrested in the Democratic National Committee offices at the Watergate Hotel.



3 June 1973

John Dean tells Watergate investigators that he has discussed the cover-up with Nixon at least 35 times.



3 August 1974

The Smoking Gun tape, including a conversation between Nixon and Haldeman formulating the cover-up, is released. Opinion quickly turns against Nixon.

9 August 1974

Nixon resigns the presidency. Vice President Gerald Ford becomes president for the rest of the term, until 1977.



1977

4 May 1977

Nixon gives his first major interview about Watergate with journalist David Frost; this interview would be dramatised in the film *Frost/Nixon*.

While Woodward and Bernstein are busy uncovering the paper trail to the White House, another revelation will prove just as disastrous for Nixon. James McCord sends a letter to Judge Sirica in March 1973, explaining that he has perjured himself, alleging orders from high up in the White House. Also in March, Nixon gets a lengthy rundown from John Dean on the scale of the dirty-tricks campaign and how the Watergate burglary came to happen. Nixon listens, appalled, as Dean recounts the web of deceit in which many of his staff are now trapped - Dean's prognosis is grim: "We have a cancer, close to the Presidency, that's growing. It's growing daily. It's compounding, it grows geometrically now because it compounds itself."

An exasperated Nixon sighs his way through Dean's prognosis, which reveals illegal activities, blackmail and perjury on a grand scale. It is clear the chain is only as strong as its weakest link - and those are cropping up everywhere as the net tightens. Asked about his personal feelings on the matter, Dean replies he is not confident the administration can ride it out. Even Dean himself is starting to feel the pressure and can't shake the impression that he is being set up as a scapegoat. He is probably correct: Nixon fires Dean, who turns star witness for the prosecution, and the president rolls the dice and gambles by disposing of some of his most trusted lieutenants, asking for the resignation of both Haldeman and Ehrlichman. Richard Kleindienst also resigns.

Coincidentally, at around this time, confirmation hearings begin for installing L Patrick Gray as permanent director of the FBI. During the hearings, Gray reveals that he has provided daily updates on the Watergate investigation to the White House and alleges that John Dean has "probably lied" to FBI investigators, enraging the White House. It is subsequently revealed that Gray has disposed of some of the contents of a safe belonging to Hunt - drawing the FBI into a web of deceit along with the CIA, the federal government and the Republican Party - forcing his resignation in April 1973. In just a few turbulent weeks Nixon had lost his three most trusted lieutenants, his attorney general and the head of the FBI. By May, more people disapprove than approve of Richard Nixon's presidency and a month later the Watergate hearings are being televised; viewers see John Dean tell investigators that he had discussed the cover-up with Nixon at least 35 times. Although Nixon can plausibly deny knowledge of the CRP campaigns and protect himself by firing staff, things are about to get much worse for the president.

Nixon is a suspicious individual who has few real friends and sees conspiracies against him everywhere. Given to brooding behaviour and capable of vulgar outbursts and ruthless behaviour, the president will later acknowledge that the American people knew little of his real personality. This side of his personality was to be his undoing. Known only to a few individuals, Nixon has had secret recording equipment installed in the Oval Office, Cabinet Room and his private office in the White House. The resulting tapes are vital in proving his knowledge of - and active participation in - the Watergate cover-up and wider culpability in allowing his aides to commit behaviour both immoral and illegal.

"Upon hearing of the arrests the next day, Nixon hurls an ashtray at the wall in fury"

NIXON'S WEB OF LIES

The complex web of deception and conspiracy that brought a president to his knees



Whistleblower

Mark Felt

The identity of 'Deep Throat' was one of the greatest political mysteries - until 2005, when Felt announced that he was journalist Bob Woodward's source. Felt had been the FBI's associate director in 1973 and was repeatedly passed over for the job of director by Nixon.



Attorney general

Richard Kleindienst

Kleindienst became aware of Watergate when G Gordon Liddy told him while playing golf that the break-in had originated within the CRP and that he should arrange for the burglars' release. He resigned the same day John Dean was fired and Haldeman and Ehrlichman quit.



Government agent

Bernard Barker

A Cuban emigrant who had served in the US armed forces and probably worked for both the FBI and CIA at various times, Barker was an early recruit to the White House Plumbers and served one year in jail for his part in the Watergate break-in.



CRP Security

James McCord

A former CIA agent who acted as the security coordinator for the CRP. He was arrested at the Watergate complex and later informed Judge John Sirica that he had perjured himself at the trial and that he had been ordered to carry out the break-in by senior White House figures.



Attorney general

John Mitchell

Mitchell was a personal friend and partisan colleague of Nixon's who was rewarded with the job of attorney general in 1969. A great believer in law and order, Mitchell was heavily involved in the so-called White House Horrors - a term he coined - of Nixon's presidency, okayed the Watergate burglary and had form in threatening journalists. Mitchell was found guilty of conspiracy, obstruction of justice and perjury and served a 19-month sentence.



Vice president

Gerald Ford

Ford had found himself surprisingly promoted following the resignation of Spiro Agnew in 1973. Within a year he had become president. One of his first acts was to pardon Nixon. He lost to Jimmy Carter in the 1977 presidential elections.



White House liaison

Gordon Liddy

Liddy was instrumental in forming the White House Plumbers and was responsible for many dirty-trick schemes. Liddy supervised the break-ins at the Watergate and acted as the chief liaison to the White House. He received a stiff 20-year sentence for his role but served only four and a half.



Government agent

Frank Sturgis

Supposedly implicated in the assassination of JFK and the Cuban Revolution, Sturgis had long known E Howard Hunt. He was one of the five men arrested while burgling the Watergate. Sturgis was jailed for his part in the break-in and later made lurid allegations Kennedy's assassination.



Journalist

Bob Woodward
Woodward covered the trial of the five Watergate burglars, initially unaware of the significance. With coaxing from his editor and help from Carl Bernstein he was able to piece together a paper trail that was instrumental in exposing the White House's campaign of dirty tricks.



White House aide

H.R. Haldeman
Haldeman was a tough White House aide who acted to block access to the president and protect his interests. Alongside Ehrlichman, he formed an impenetrable shield: as a result the pair became known as the 'Berlin Wall' - a reference to their activities and Germanic names.



Lawyer

Charles Colson
A lawyer who worked for Nixon, one of the Watergate Seven found guilty of obstruction of justice and who sentenced to seven months in prison. Following his release Colson found God, donating all his subsequent fees to charity.



Solicitor general

Robert Bork
Bork was solicitor general when both the attorney general and deputy attorney general resigned over a refusal to sack Watergate Special Prosecutor Cox. Bork later claimed that Nixon promised him a Supreme Court position if he carried out this order. He complied but Nixon didn't fulfil his part of the deal.



Deputy assistant to the president

Alexander Butterfield
Butterfield was responsible for the operation of the secret taping system, which Nixon had installed in the White House. His deposition was crucial in establishing the existence of the system - and the tapes that sealed Nixon's fate.



Judge

John Sirica
John Sirica presided over the trial of the Watergate burglars - handing out tough sentences in order to coerce admissions from them that they acted in concert with others. He later ordered Nixon to hand over tapes of White House conversations to Archibald Cox.



White House counsel

John Dean
Dean was referred to as the 'master manipulator of the cover-up' by the FBI. He turned on Nixon and became the star witness for the prosecution at the Senate Watergate Committee hearings and pleaded guilty to a single felony count after suspecting that he was being set up as a scapegoat. Dean had destroyed evidence following the Watergate burglary arrests and received a prison sentence, despite his co-operation. In later life he became a critic of the Republican Party.



CIA agent

Howard Hunt
Hunt had been drafted into Nixon's unofficial investigations unit - the White House Plumbers - charged with fixing 'leaks' to the media. He was involved in the planning of the Watergate burglaries and sentenced to over 30 months in prison.



FBI director

Patrick Gray
Gray was nominated to succeed Hoover as head of the FBI but resigned after less than a year on the job. Underestimating its significance, Gray had destroyed evidence from a safe belonging to E. Howard Hunt. When the scale of the conspiracy became clear to him he resigned and spent years trying to clear his name.



Chief domestic advisor

John Ehrlichman
Ehrlichman ensured that Nixon was protected from unnecessary attention and worked as White House counsel before moving to a role as chief domestic advisor. From this position Ehrlichman launched vicious assaults on the president's enemies and created the White House Plumbers. He had worked with Nixon for over a decade - initially on his unsuccessful 1960 presidential bid - and never forgave Nixon for the lack of a presidential pardon. He served 18 months in prison and died in 1999.



Director of CRP

Jeb Magruder
Magruder served as a special assistant to the president until the spring of 1971, when he left to manage the CRP. He was heavily involved in Watergate and alleged that Nixon had prior knowledge of the affair. He served seven months in prison.



CRP chairman

Maurice Stans
Stans was allegedly responsible for raising large amounts of cash in donations that Nixon kept in a White House safe. Stans denied any knowledge of Watergate and, though indicted for perjury and obstruction of justice, he was acquitted the following year.



Watergate prosecutor

Archibald Cox
A respected lawman, Cox was appointed as the first special prosecutor in the Watergate case. Learning of the existence of secret tapes recorded at the White House, Cox pressed for their release. Cox was eventually fired but left with his reputation enhanced.



CRP treasurer

Hugh Sloan
Sloan was unwittingly responsible for endorsing cheques that went to pay the White House Plumbers. Once Sloan discovered the activities of the plumbers he resigned and became a source for Woodward and Bernstein.



Nixon met by an angry crowd while campaigning during the height of the Watergate scandal, 1974

Nixon has been at the sharp end of American politics for decades. He has made powerful friends and enemies alike and learned how to play dirty, even ordering tax investigations on Kennedy and 1972's Democratic presidential candidate, Hubert Humphrey. On the tapes, Nixon is heard to remark: "I can only hope that we are, frankly, doing a little persecuting. Right?"

In the run-up to the presidential election of 1972, when it looks like Ted Kennedy - brother of JFK - will be a potential opponent for the 1976 election, Nixon and his aides attempt to use the Secret Service and Inland Revenue Service to spy on the Democrat senator in the hope of discovering material they can use to smear him. Such operations have been learned over 25 years in politics - Nixon smears his first political opponents as communists or communist sympathisers during his 1946 and 1950 Congress election runs. His nickname, Tricky Dicky, is devised during 1950 and he finds it hard to shake. Nixon also uses the shooting of presidential hopeful George McGovern in 1972 as an opportunity to place a loyal man within a security protection detail on Ted Kennedy. The spy, Robert Newbrand, is to pass information back to the White House. "[W]e just might get lucky and catch this son of a bitch and ruin him for '76", says Nixon of Kennedy.

In light of what the president knows to be on the tapes, July 1973 brings a bombshell that Nixon instantly recognises as disastrous. The aide responsible for the president's schedule and day-to-day archiving testifies that Nixon has had recording equipment secretly installed throughout White House offices. The ramifications are obvious, with the tapes laying bare just how widespread the use of dirty tricks are and how the orders frequently come direct from the president.

Archibald Cox, leading the hearings, instantly subpoenas the tapes. Realising the gravity of the situation, Nixon refuses the request, citing executive privilege and - for the next few months - begins a high-stakes game of bureaucratic cat and mouse in an effort to keep the tapes in his possession. In October, just days after losing his vice president, Spiro Agnew, to an investigation into past corruption, Nixon astonishes his advisors by ordering Cox's firing - something only Elliot Richardson, the attorney general, could legally do.

The president, furious at Cox's intransigence over refusing to accede to an offer to appoint a Democrat senator to listen to the tapes, rather than hand them over, makes it clear that he will accept the resignation of Richardson and Deputy Attorney General William French Smith if they do not sack Cox. On a night in October, dubbed the Saturday Night Massacre, Richardson refuses the order and promptly resigns. Having been given the same order by Nixon, French Smith also refuses and resigns, leaving Solicitor General Robert Bork to reluctantly carry out the order.

Public opinion quickly turns against Nixon, with protests greeting the president's public appearances. In November, he goes on the offensive, delivering a televised question-and-answer session where he delivers the famous "I'm not a crook" speech. He claims the tapes will exonerate him, but knows that this is not the case and that his political manoeuvrings are merely buying time: his presidency is a busted flush. Nixon had earlier recognised the danger the tapes posed and asked Haldeman to dispose of them: "Most of it is worth destroying", says the president. "Would you like - would you do that?" Haldeman replies in the affirmative but crucially is not as good as his word, perhaps believing that if he is seen to be responsible for destroying the tapes he would make the president bulletproof and seal his own fate.

In July 1974, having exhausted various means of preventing their release, including releasing transcripts and heavily redacted tapes, Nixon is ordered to give up the tapes to investigators and Congress moves to impeach the president. Any possibility that Nixon might hang on disappears in August, when a previously unheard tape is released. The evidence is known as the Smoking Gun tape. On the tape Nixon is heard advising Haldeman to advise the CIA to stop the FBI from investigating the Watergate break-in: "When you

WHO WAS DEEP THROAT?

Bob Woodward of *The Washington Post* knew a source at the FBI who fed him regular information. When the Watergate scandal broke, the source was in a perfect position to observe the presidency and resulting investigation. His source was Mark Felt, an associate director at the FBI. Woodward referred to him as 'My Friend' but the *Post's* editor, Howard Simons, renamed him 'Deep Throat' - a reference to a pornographic film of the time - to protect his identity.

The pseudonym fired the public imagination: Woodward would move a flowerpot on the balcony of his apartment when he desired a meeting; Felt would respond by leaving a time written on the journalist's daily newspaper. The pair would meet in an underground garage in Virginia.

The source fed information about the investigation to Woodward, revealing a complex web of deceit to bring down the president. Woodward and colleague Carl Bernstein protected Deep Throat's identity for 30 years before Felt outed himself in 2005, just three years before his death.



"Public opinion turns against Nixon, with protests greeting the president's public appearances"



President Nixon's resignation created a media storm

get in these people, when you... get these people in, say: 'Look, the problem is that this will open the whole, the whole Bay of Pigs thing' [...] they should call the FBI in and say that we wish for the country, don't go any further into this case, period!"

Opinion is divided as to what 'the Bay of Pigs thing' refers to, though the implication to the CIA is obvious - if they do not assist in the Watergate cover-up, sensitive information regarding the agency's role in the aborted CIA-backed invasion of Cuba in 1961 will be released by the White House. The tape constitutes authentic evidence that the president was involved in the Watergate cover-up and attempted to pressure federal agencies into participating.

Senior Republicans gather to tell Nixon that he has no support in Congress. Ever the political survivor and having claimed that he would never resign, even Nixon realises that he has exhausted his options. The president promptly resigns, knowing that he will be impeached if he remains in office. His resignation speech is broadcast from the White House the night before he leaves for his home in California. Typically, his speech wrongfoots many, with allusions to the difficulties of office and oblique mentions of wrongdoing, notions of duty and vague expressions of regret.

Nixon also includes a lengthy summation of what he sees as his achievements in office, preferring them to discussions of Watergate - a trope that would become familiar in years to come. Nixon never escapes the taint of Watergate but he becomes a respected statesman on the American and global stages and wins acclaim for his domestic and foreign accomplishments. He is almost immediately pardoned by his successor, Gerald Ford, in a move that many decry.

Nixon avoids jail but the scale of wrongdoing - and the depth of the unpleasantness that modern US politics constitute - takes voters by surprise and reveals those at the top of government as venal, vulgar, deceitful and greedy. Most of all, it shows US presidents to be flawed and long after his resignation Nixon still inspires fascination.

Upon leaving the White House, Nixon spends most of his time at his house in California - driving to a small outhouse on his golf buggy every day to work on his memoirs. In 1977, short of cash and keen to rehabilitate his reputation, he agrees to the now-famous series of interviews with journalist David Frost. The trained lawyer and long-serving politician initially runs rings around the under-prepared Frost, but on the final day of interview the disgraced president finally opens up on the Watergate scandal: "I let down the country. I brought myself down. I gave them a sword and they stuck it in. And they twisted it with relish."

The former president may have admitted some culpability but he never shakes off his ardent belief that the ends justified the means. Nixon had relied on a range of dirty tricks - many illegal - to claim power, and then affect change as he saw it. The apparently insignificant burglary that brought down the 37th president of the United States was just one of the ways that he bent the law - it's just that this time, he got caught.



An emotional Nixon gives his farewell speech at the White House, August 1, 1974

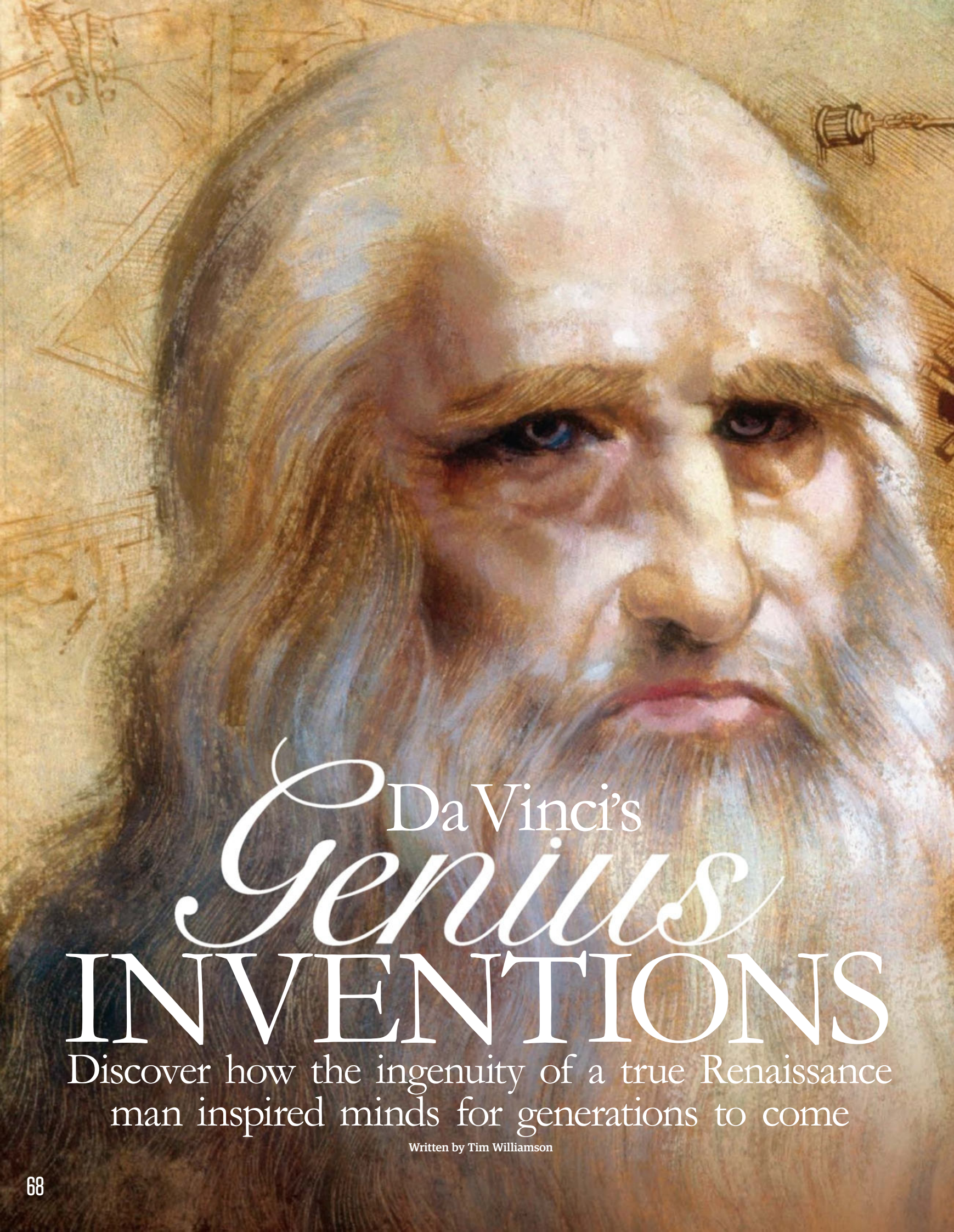
THE AFTERMATH

Following his resignation Nixon cut a sorry figure. Inconsolable at losing the job he had coveted so deeply, wounded by the thought he had betrayed the American people and lost with little to do at his home in California, he quickly became ill and almost died. However, he worked to rehabilitate himself and by the time of his death was a respected political elder; sought after for his advice by sitting presidents and even former opponents like Hillary Clinton. When he died it was revealed that he had requested not to have a state funeral, as is the usual custom for deceased US presidents.

In his resignation speech, Nixon made much of the advances he thought had been made in foreign policy - where many US presidents believe their legacy will be judged. Opinions vary on his efforts here and Vietnam will always tarnish the reputation of Nixon and his predecessor, Lyndon B Johnson. However, Nixon's work at home is perhaps more impressive. He forged ahead with the desegregation of the South, created numerous environmental acts to protect the US ecology

and steered a course that avoided the ideological impulses of following Republican presidents.

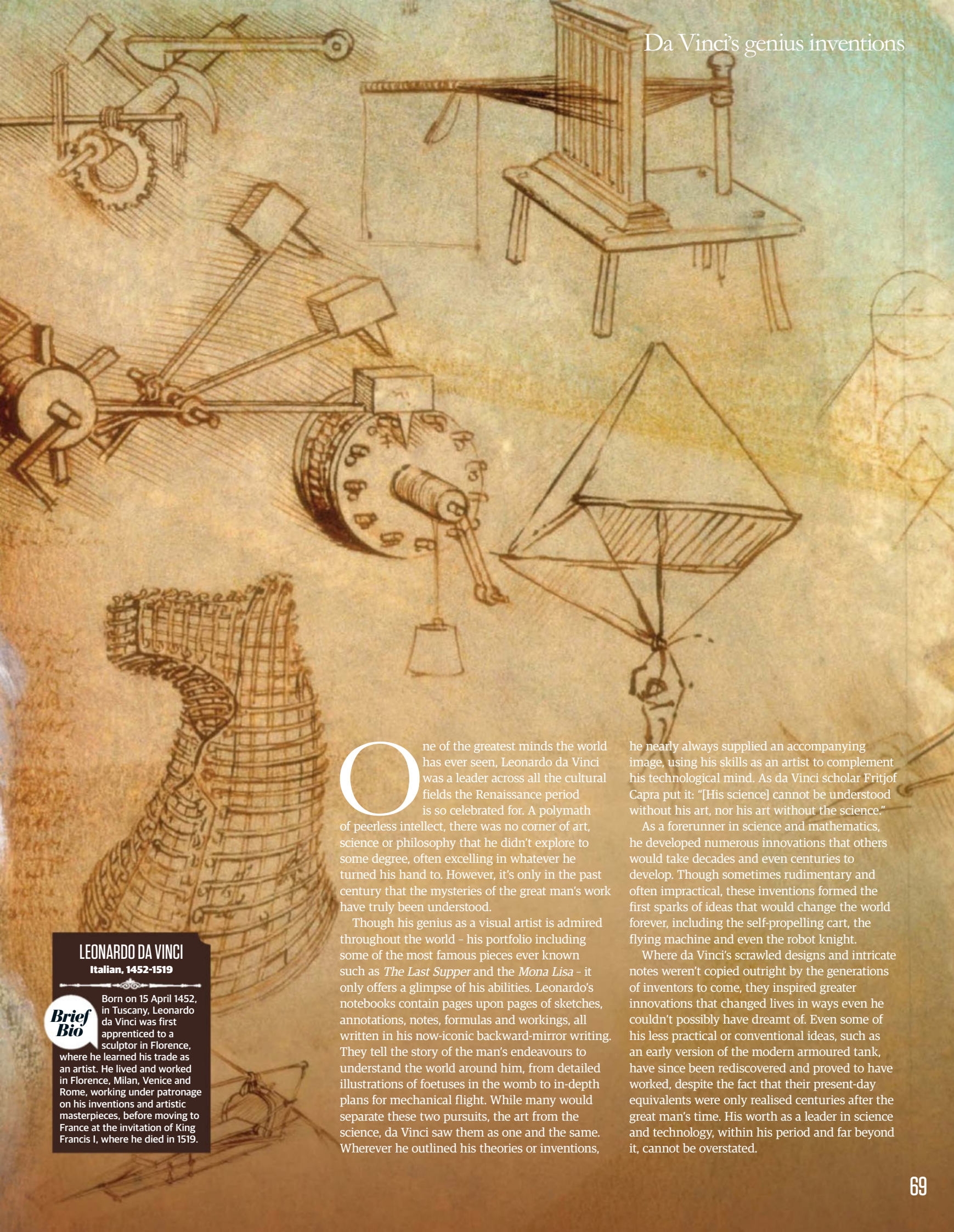
Nixon strikes a strange figure among US presidents - oddly awkward and self-aware, yet driven by a conviction that the president could not be wrong and that the interests of the ruling administration and United States were indivisible. He displayed the brooding character of someone bearing a great burden; his own self-image was laid bare in a quote from his resignation speech: "Sometimes I have succeeded and sometimes I have failed, but always I have taken heart from what Theodore Roosevelt once said about the man in the arena, 'whose face is marred by dust and sweat and blood, who strives valiantly, who errs and comes short again and again because there is not effort without error and shortcoming, but who does actually strive to do the deed, who knows the great enthusiasms, the great devotions, who spends himself in a worthy cause, who at the best knows in the end the triumphs of high achievements and who at the worst, if he fails, at least fails while daring greatly.'"



Da Vinci's
Genius
INVENTIONS

Discover how the ingenuity of a true Renaissance man inspired minds for generations to come

Written by Tim Williamson



One of the greatest minds the world has ever seen, Leonardo da Vinci was a leader across all the cultural fields the Renaissance period is so celebrated for. A polymath of peerless intellect, there was no corner of art, science or philosophy that he didn't explore to some degree, often excelling in whatever he turned his hand to. However, it's only in the past century that the mysteries of the great man's work have truly been understood.

Though his genius as a visual artist is admired throughout the world - his portfolio including some of the most famous pieces ever known such as *The Last Supper* and the *Mona Lisa* - it only offers a glimpse of his abilities. Leonardo's notebooks contain pages upon pages of sketches, annotations, notes, formulas and workings, all written in his now-iconic backward-mirror writing. They tell the story of the man's endeavours to understand the world around him, from detailed illustrations of foetuses in the womb to in-depth plans for mechanical flight. While many would separate these two pursuits, the art from the science, da Vinci saw them as one and the same. Wherever he outlined his theories or inventions,

he nearly always supplied an accompanying image, using his skills as an artist to complement his technological mind. As da Vinci scholar Fritjof Capra put it: "[His science] cannot be understood without his art, nor his art without the science."

As a forerunner in science and mathematics, he developed numerous innovations that others would take decades and even centuries to develop. Though sometimes rudimentary and often impractical, these inventions formed the first sparks of ideas that would change the world forever, including the self-propelling cart, the flying machine and even the robot knight.

Where da Vinci's scrawled designs and intricate notes weren't copied outright by the generations of inventors to come, they inspired greater innovations that changed lives in ways even he couldn't possibly have dreamt of. Even some of his less practical or conventional ideas, such as an early version of the modern armoured tank, have since been rediscovered and proved to have worked, despite the fact that their present-day equivalents were only realised centuries after the great man's time. His worth as a leader in science and technology, within his period and far beyond it, cannot be overstated.

LEONARDO DA VINCI

Italian, 1452-1519

Brief Bio

Born on 15 April 1452, in Tuscany, Leonardo da Vinci was first apprenticed to a sculptor in Florence, where he learned his trade as an artist. He lived and worked in Florence, Milan, Venice and Rome, working under patronage on his inventions and artistic masterpieces, before moving to France at the invitation of King Francis I, where he died in 1519.

THE ORNITHOPTER

The first-ever attempt at a flying machine

In his *Codex On The Flight Of Birds*, Leonardo considered the questions of aerodynamics and presented ways in which man could replicate the natural mechanism that enables creatures to fly. From around 1488 to 1514, he was obsessed with the power of flight and was constantly observing birds and bats in an attempt to understand and harness the basic principles that govern it. In his *Codex*, Da Vinci wrote: "A bird is an instrument working according to mathematical law, an instrument which is within the capacity of man to reproduce with all its movements."

Sketches of the ornithopter - a single-winged, human-powered flying device - attempted to directly mimic the mechanism of natural flight. Presented in a number of variants of the design, the device would be operated by a single pilot, lying prone

underneath the canopy, which they could flap through a series of levers and gears. This flapping, it was theorised, would provide both the thrust and lift that was required for flight.

Based on a wooden frame, da Vinci's skeletal designs aren't presented with any covering, though it's likely that he intended to use a cloth or netting to provide sufficient resistance for the wings. It's unclear whether he actually built and tested an ornithopter, but it's now thought that the invention would not have fulfilled its creator's dream. Nonetheless, the machine remains one of the earliest plausible attempts by man to conquer the skies, making its designer among the first pioneers of flight.

Inspired by nature

After his observations and experiments with bats and birds, Leonardo utilised a bird-like wingspan into his designs, to grant the pilot the maximum amount of air resistance.

Suspended pilot

The ornithopter's pilot would be suspended beneath the canopy, in the style of modern-day hang-gliders.

Like a bird

The machine, powered by a single pilot, was designed to repeatedly flap in the same way a bird does, lifting its occupant into the air.

Pedal power

Da Vinci understood that a person would not be able to provide enough power for flight with their arms alone, so incorporated foot pedals into his designs to provide extra force.

"The machine is one of the earliest plausible attempts by man to conquer the skies"

One of the inventor's sketches from his notebook

Verdict

Ultimately a failure in terms of practicality. Da Vinci isn't likely to have ever seen his ornithopter successfully fly, and today experts have realised that based on his sketches, it almost certainly would have failed. However, the machine is the first step on the runway towards human flight, several centuries later. His understanding and incorporation of the natural world, as well as his sturdy grasp of physics, gave an edge to his designs that hadn't previously been seen.

Though this attempt to master flight remains remarkable for its time, it is unlikely to have worked

THE SELF-PROPELLED CART

The world's first self-propelled vehicle

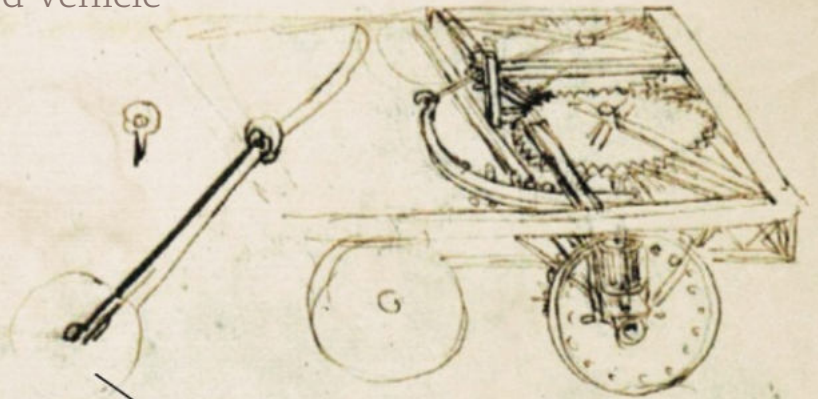
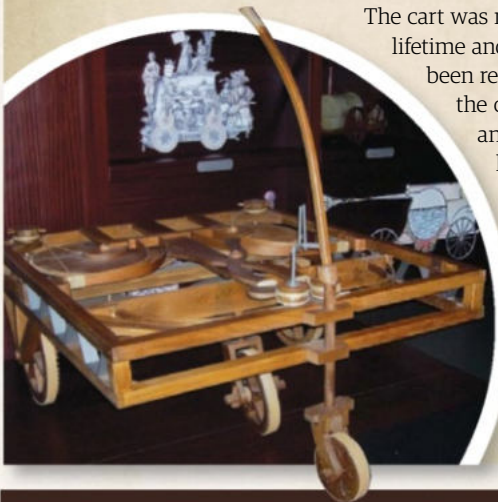
Despite predating combustion and steam technology by some centuries, Leonardo was able to design a fully working vehicle in around 1478 that could carry itself along without human assistance - possibly the earliest precursor to the modern automobile.

Based on a wind-up spring, much like a child's clockwork toy, the wheels of the cart had to be moved in reverse repeatedly, priming the strong springs before releasing the device. The cart was even intended to be programmable - by placing wooden blocks between the vehicle's gears the operator could determine when it would turn at a certain angle, making it appear to any onlookers as though it were choosing the direction itself.

It's thought that da Vinci only envisioned the cart to be used as a spectacle, for the amusement of crowds rather than any other practical purpose. The fact the frame features no seat for a driver or passenger suggests he hadn't considered its use as a means of transportation.

The cart was never built during his lifetime and has only recently been re-created. Given the correct resources and time, there's no knowing how far he could have taken his cart, but by thinking outside of his own time he was pre-empting a vision of modern life beyond anything he could imagine.

A modern re-creation of the self-propelled cart



Wind-up mechanics

The spring mechanism powering the cart would be primed by turning the wheels in reverse, just like a child's clockwork toy.

Short journey

The cart would have been able to travel for around 40m (130ft) before eventually running out of energy and curiously only able to turn right.

Plotting a path

The cart's gears enabled the operator to predetermine when it would turn at an angle on its path, by placing wooden blocks between them.



Verdict

If it was realised just what an innovation had been conceived, it's possible Leonardo would have given his cart a grander stage than frivolous carnivals. Though his cart was unrefined and still many miles away from a modern-day motor vehicle, the mechanics that gave it life were revolutionary.

THE BALL BEARING

The tiny invention that makes a big impact

Though they seem innocuous, ball bearings are essential components in a whole range of machines. When considering how best to reduce friction between two moving surfaces, in order to increase the speed at which they could rotate, da Vinci sketched out several uses of tiny balls within a mechanism. He intended to apply this concept to his helicopter, using the limited friction of the balls to increase the propeller's rotation speed.

Ball bearings are widely used today in practically any device with parts that require a high-speed rotation.

Verdict

The fact that the ball bearing is still being used more or less exactly as its creator envisioned is testament enough to both the man and his invention. Though the small component wasn't quite enough to save its creator's flying ambitions, it stands as one of his most important inventions.

Da Vinci sketched several solutions for reducing the friction between two moving parts, concluding that the ball shape was the most practical





This early sketch of a parachute applied what little was known about the physics of air resistance at the time

THE PARACHUTE

An early attempt to fall to Earth safely

In a margin of his notes, da Vinci sketched a small figure grasping a triangle-shaped construction. He commented that with enough linen cloth arranged across the frame, a man could "jump from any great height whatsoever without injury."

Though his design was later studied and adapted by several inventors, the modern-day ripcord parachute, developed in the early-20th century, bears little resemblance to his sketch. However, his clear understanding of the principles that would enable a person to fall safely back to Earth, applying his knowledge of aerodynamics and air resistance, stood the test of time as an example to those who would follow him. Some 500 years later his device was actually built and was proved to work, though the weight of the frame would certainly have caused problems when landing.

Verdict

It's the theory and thought behind the invention of the parachute, rather than the device itself, that deserves the accolades. A successful modern-day test of the inventor's concept only confirmed his genius.

CLOCKS

Genius time-keeping ideas

Though he can't be credited with the invention of the clock, the Renaissance man contributed great advancements towards ever-more accurate and reliable mechanisms. During the 15th century, clockmakers started to use springs rather than weights as a measuring device and in around 1490, da Vinci adopted this concept to introduce two separate mechanisms, one each for hours and minutes.

He is credited with being among the first inventors to include a fusee in his clock designs, a conical pulley that serves to balance out the pull of the main chain as it winds down. This resulted in far more accurate timekeeping. He also developed a rudimentary alarm clock, based on the flow of water from one container to another, with a series of pulleys raising the inventor's legs at the stroke of a clock.



Da Vinci contributed many clockwork improvements

Verdict

This more-accurate and innovative design contributed much to time-keeping. A fundamental understanding of clockworks, also applied to many of his other different inventions, meant Leonardo had given the world another advancement that in part keeps us all on time today.

DIVING SUIT

A tool to explore new worlds

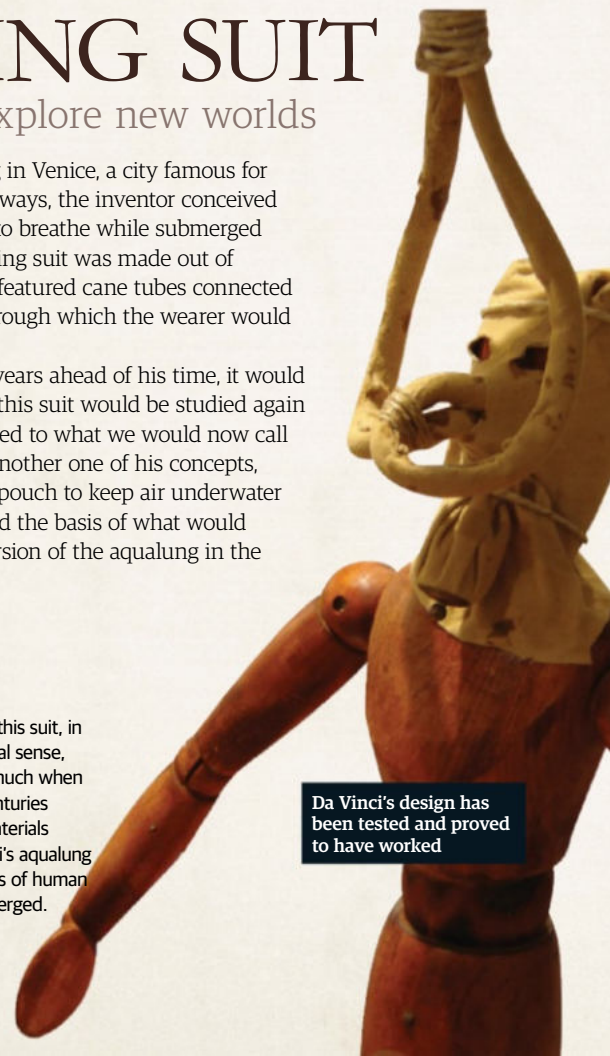
In 1499, while living in Venice, a city famous for its network of waterways, the inventor conceived a way for a human to breathe while submerged underwater. His diving suit was made out of pigskin leather and featured cane tubes connected to a floating bell, through which the wearer would be able to breathe.

Once again light years ahead of his time, it would be centuries before this suit would be studied again and further developed to what we would now call scuba equipment. Another one of his concepts, the use of a leather pouch to keep air underwater for breathing, formed the basis of what would become an early version of the aqualung in the 19th century.

Verdict

The early design of this suit, in its most fundamental sense, would not change much when it was replicated centuries later. Though his materials were crude, da Vinci's aqualung harnessed the basics of human survival while submerged.

Da Vinci's design has been tested and proved to have worked



Spring-powered

It would take four men to prime the central spring with enough energy that, when released, could spin the helical blade at a very high speed.

Rapid lift

The large helical blade would rotate at great speed to compress the air and provide enough force to lift the machine.

Untested

Though he mentions testing his concept in smaller model-sized prototypes, it's unclear whether da Vinci ever fully tested his helicopter.

Sturdy but light

In his notes the inventor mentions that the aerial screw should be made out of a strengthened linen and wire to provide enough air resistance.

THE HELICOPTER

A precursor to the modern-day vehicle

It may seem unconventional to our modern eyes, but this design is the earliest known plan for a human-powered helicopter. Utilising a screw-shaped propeller, the machine featured a powerful loaded spring to harness and release enough energy to spin the winding blade and lift it into the air.

The aerial screw, as it is more commonly known, would have required four men to fully prime the powerful spring, though it's unclear whether they would have remained on the device as it was propelled into the air. As the spring was released, it would turn the blades of the screw at high speed, compressing the air below it to provide sufficient lift from the ground - a method similar to today's

vehicles. It's thought that da Vinci had tested the concept for the device on smaller models, possibly children's toys, but a full-scale prototype, purportedly to be made of linen and iron wire, was likely never built. Like his other proposals, the aerial screw would have been far too heavy to fly.

Once again, da Vinci applied his knowledge of aerodynamics and air resistance in his quest for achieving practical flight - he even invented the ball bearing in his attempt to overcome the problem of the friction his device would encounter. When his notes were finally published nearly three centuries later, his observations and designs inspired a new generation of aerial pioneers, though the modern-day helicopter would not be built until the 20th century.

"His designs inspired a new generation of aerial pioneers"

Verdict

Much like the ornithopter, the helicopter was a doomed design, but with a brilliant method. Utilising some of the principles developed by his fellow polymath Archimedes some centuries earlier, the Italian's combination of the spring and screw applies his intimate understanding of lift, drag and aerodynamics.

THE MACHINE GUN

A rapid-fire weapon designed to cause carnage on the battlefield

Gunpowder weapons gained greater prominence on battlefields throughout the Renaissance period, gradually becoming more accurate as models were refined and improved. Da Vinci conceived many of his now-famous weapons of war while under the patronage of Ludovico Sforza, the Duke of Milan, who sought to gain the upper hand over his enemies in battle. Italy in this period wasn't the unified country we know today, but rather a series of individual city states in bitter rivalry with one another. These cities were also at constant threat from nation states, meaning that conflict and war were never far from people's minds, so new weapons were in constant development.

He saw the long period of time it took to prepare and reload a cannon as a major

flaw in its effectiveness in battle, so drew up designs of guns featuring several barrels that could be reloaded quickly. He designed and produced a range of gun prototypes featuring breach-loading barrels, meaning the operator wouldn't have to walk around the front of the gun to load it, which was dangerous and time-consuming.

One of his designs features three separate, rotating rows of 11 barrels that could be fired, loaded and cooled in quick succession, dramatically speeding up the rate of fire. Another sketch features a fan-like layout, spreading several barrels in an arc that could devastate enemy ranks if fired at once or in rapid succession, something unseen in the world up until that point.

While these innovations aren't machine guns in our modern understanding, they signalled the beginning of a new age of warfare. Though a pacifist at heart, da Vinci had codified a killing machine that would change the face of war.

Verdict

Though a pacifist at heart, this terrible invention signals da Vinci's capitulation to pursuing one of humanity's grimmer aspirations: more effective and terrible means for murder. Identifying all the problems that made cannons so impractical, such as slow reloading and overheating, the inventor had advanced a device decades into the future.

Breach-loading

By using a breach-loading design, da Vinci had almost halved the time it took to reload and fire the cannon.

Fan fire

This fan design was intended to spread the gun's arc of fire as wide as possible, resulting in a rapid and widespread burst of missiles.

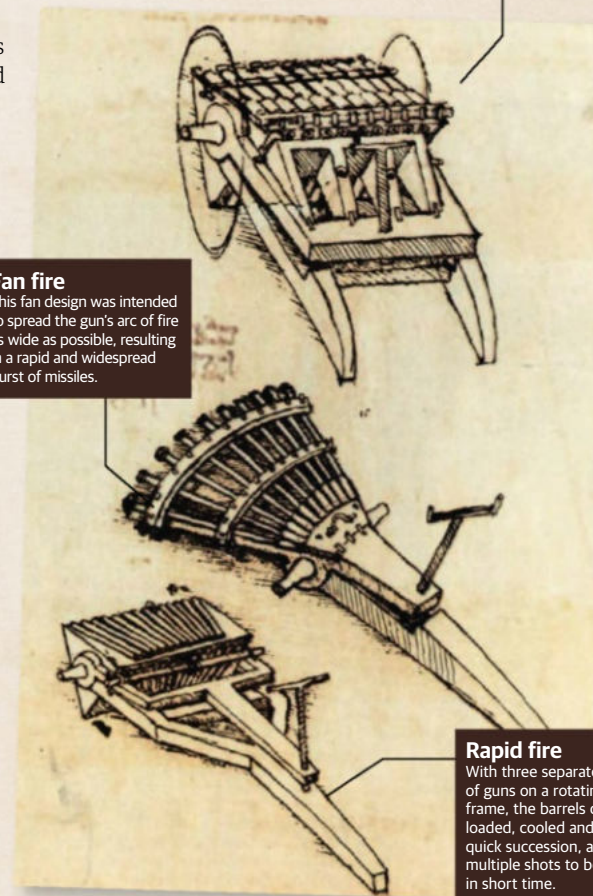
Rapid fire

With three separate rows of guns on a rotating frame, the barrels could be loaded, cooled and fired in quick succession, allowing multiple shots to be taken in short time.

"Da Vinci had codified a killing machine that would change the face of war"



This early machine gun would have caused major damage to its targets



THE ROBOT KNIGHT

An intricate contraption to delight and astound

Today, we may be developing robots with ever-increasing levels of artificial intelligence and flexibility, but these are only the latest incarnations of the automaton, invented by Leonardo some 500 years ago. It is believed he first thought of his invention in 1495.

This robot, with the external appearance of a Germanic knight, contained two separate operating systems of gears and pulleys, each capable of several degrees of

movement. The knight was able to sit, stand and even raise its visor. Da Vinci's thorough understanding of human anatomy certainly helped him produce such a lifelike creation.

The notes on the automaton were so cryptic it's only relatively recently that engineers, most notably robotics expert Mark Rosheim, have been able to decipher and follow his plan, which have in fact directly influenced modern-day robot designs for NASA.

Verdict

There is perhaps no better example of the polymath's mastery, of both the fields of art and science, than the automaton. Again only used as an amusing trifle for his peers, it's a shame that the great inventor would certainly never have guessed what brilliant machines his design would inspire.



Not only was da Vinci's robot design lifelike, it could also move about entirely independently

THE TANK

An early example of a modern-day weapon of war

It may look like a work of fantasy, but this is perhaps the earliest example of an armoured vehicle. During the Renaissance, warfare was changing rapidly, as states were striving to gain the upper hand in battle.

This early sketch of a reinforced, armed vehicle is just one of Leonardo's many designs produced to change how battles were fought. It features an angular outer shell, encasing a set of four wheels and several cannons pointing out of the machine, which would be driven by several men turning the cranks of the wheels, positioning the vehicle toward the enemy before opening fire.

This early tank has caused controversy in that it features a very basic flaw in its design. The cranks used to turn the wheels, if built to the exact specifications in da Vinci's sketches, would act against each other, making the machine impossible to move. It's been suggested that such a simple flaw would not have gone unnoticed by such a perfectionist and that he deliberately included the mistake so his deadly vision could never be used. Still, this design shows how his artistic vision was operating far beyond his own time, realised hundreds of years later when metal tanks would rumble across the muddy battlefields of WWI and change the face of modern warfare.

Flawed design

The wheels would be turned via cranks that would be operated by several men, though it's been shown that the design for these is flawed.

Thick skin

The tank's angled outer shell meant it could better deflect incoming fire, as the skin would be thicker if struck from an angle rather than side-on.

Field of fire

The tank was designed to provide a 360-degree field of fire, causing mass destruction among the enemy ranks, while also risking friendly fire.

Fearsome enemy

The tank would have been able to move in any direction, providing an intimidating, if slow and cumbersome, opponent on the battlefield.

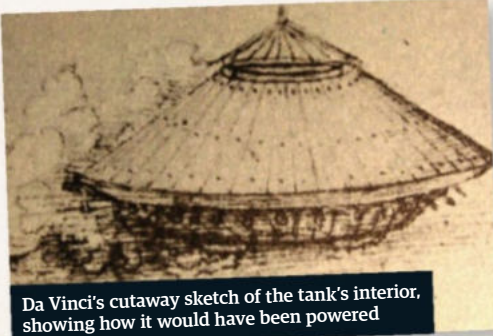
Man-powered

Though he considered using horses to power the machine, the inventor felt they might become too unpredictable when confined within the tank, so opted for man-power.

Verdict

With modern eyes this contraption seems nothing like the tanks that roam today's battlefields so effectively, and its total lack of practical application compounds its failure. However, working with the tools available to him, da Vinci's vision is a truly terrifying vision of man's desire for destruction.

"Despite its deadly potential as a formidable weapon of war, this early tank has caused controversy"



Da Vinci's cutaway sketch of the tank's interior, showing how it would have been powered

LEONARDO'S INFLUENCES

The peers and patrons of the great inventor

DEL VERROCCHIO

Among the finest Florentine artists of the 15th century, del Verrocchio tutored the young da Vinci. Leonardo is even thought to have made significant additions and changes to some of his master's works, including the famous *Baptism of Christ*.



MICHELANGELO

Michelangelo's contribution to Renaissance art, most famously the ceiling of the Sistine Chapel in the Vatican, cannot be overstated. The two crossed paths while living and working in Florence at the beginning of the 16th century.



LUDOVICO SFORZA

During the 1490s, after his ascension to the dukedom of Milan, Sforza continued to patronise da Vinci, who had been living and working in the city for several years. The duke commissioned many of da Vinci's military designs to aid him in his wars.



FRANCESCO MELZI

Melzi was among da Vinci's most accomplished students and accompanied him in France during his final years. As well as the executor of da Vinci's will and his principal heir, Melzi is credited with one of the most famous portrait sketches of da Vinci as an elderly man.





AUSTRALIA'S FIRST PENAL COLONY

How punitive criminal sentences, a gruelling
journey and years of backbreaking labour forged the
modern-day land down under

Written by Ben Biggs



There wasn't much in the way of mercy for a common criminal in 18th-century Britain. You could be branded or whipped for a relatively minor offence and for repeat offenders, the hangman's noose awaited. The infrastructure of the criminal justice system was as outdated as the punishments it dished out, a relic of medieval times and unable to keep up with the burgeoning population and an exponential crime rate. A rudimentary police force was still over a century away, so with some help from the night's watch, victims of crime were expected to obtain an arrest warrant, gather a mob and then apprehend the criminal themselves. Once the accused was handed over to the authorities they were expected to pay the cost of prosecution, which was often beyond the means of the working class. As if that wasn't incentive enough to simply take it on the proverbial chin, if the victim pursued the criminal through court, they could face retaliation from members of the gang they belonged to.

"Britain [...] simply looked to a vast wilderness brimming with opportunity on the far side of the world: Australia"

Unsurprisingly, a high number of crimes simply went unreported.

The courts themselves were also poorly equipped, with archaic legislation that allowed those cunning criminals that arrived at the court dock to easily slip through the fingers of the law. The biggest thorn in a magistrate's side was 'Benefit of Clergy', a provision by which first-time offenders could simply quote the first verse of *Psalms* 51, beginning: "Have mercy upon me, O God..." to effectively get themselves off the hook. This was a throwback to a time when it was deemed that only those of the cloth could read and know the *Bible*, and thus were beyond the jurisdiction of anything but a church court. Although many 18th-century

criminals couldn't read, by rehearsing this verse they could easily avoid a brutal punishment altogether and walk away with their freedom and reputation intact.

As a result, the crime rate rose in Britain while death sentences became an everyday tool in a judge's arsenal, used as a draconian way of reducing the number of criminals on the street as much as a deterrent. Even so, a state-sanctioned blood bath of hangings for the dozens of crimes that a criminal could receive capital punishment for was something the British government wanted to avoid. So, in 1718 and with the New World of America firmly in sight, the Transportation Act was put in effect.

AUSTRALIA'S FIRST PENAL COLONY

Transportation was a legal way of sending convicted criminals abroad to labour in the new colonies. The act allowed for two categories of punishment for two different types of offence: for those that would normally receive 'Benefit of Clergy', the judge could hand out seven years of overseas labour instead of a branding or a whipping. Capital crimes could be repealed at the discretion of the judge and, if he was in a merciful mood, a death sentence could be reduced to a minimum 14-year transportation sentence. It solved the pressing issues of cheap labour in the new world, removed criminals from the streets and emptied jails; for the British government it seemed like the perfect solution. Thus Britain forged its new colonies on the blood and sweat of convicts. This was such a popular form of punishment that 50,000 people were transported to America from 1718 to 1786, and when the American Revolution broke out, making transportation to New England impossible, Britain didn't consider changing its policy but simply looked to a vast wilderness brimming with opportunity on the far side of the world: Australia.

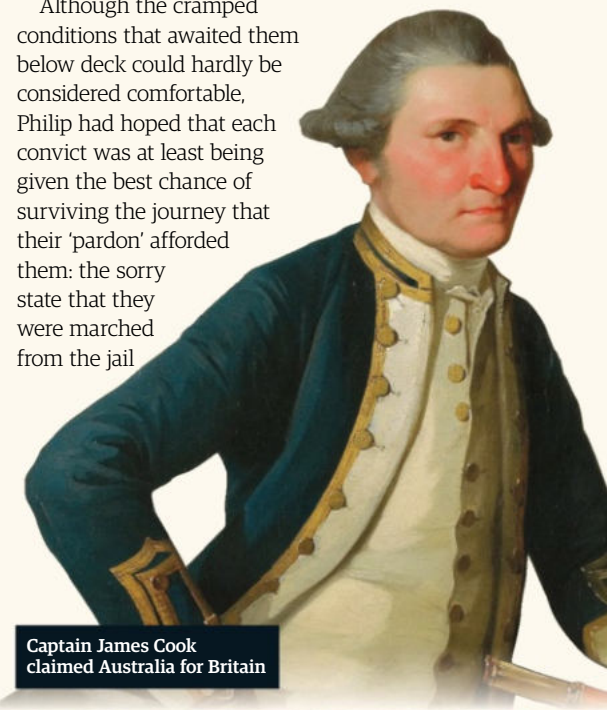
The 'First Fleet', as it's now known, set sail for Australia on 13 May 1787 and consisted of 11 ships: two armed Royal Navy vessels, three supply ships

and six criminal transports housing 736 convicts in total. The fleet's admiral was Arthur Phillip, a working-class military man who had ascended through the merchant navy from apprentice at 13, before giving up his civilian rank to join the Royal Navy as a seaman two years later. He was a self-taught navigator and excelled in other maritime disciplines, which gave him a distinct edge over his peers and allowed him to take charge of his own fleet as admiral aged 50. He was also a disciplined, far-sighted and pragmatic leader who believed slavery would only hinder the progress of the new colonies, yet wasn't afraid to use the hangman's noose to make an example of those convicts who broke the rules repeatedly.

Only a few of those aboard had been given transportation sentences for violent crimes that would otherwise have necessitated a death penalty. Among those guilty of lesser crimes were 70-year old Elizabeth Beckford, given seven years for stealing a wheel of cheese, 11-year old James Grace, transported for stealing ribbon, and nine-year old John Hudson, a chimney sweep also given a disproportionately harsh sentence for common larceny. Admiral Phillip had hoped for tradesmen to set up the new colony but not only was he dismayed by the largely unskilled

rabble he was presented with, he was appalled at the treatment the courts had meted out to the prisoners while their fate was decided.

Although the cramped conditions that awaited them below deck could hardly be considered comfortable, Philip had hoped that each convict was at least being given the best chance of surviving the journey that their 'pardon' afforded them: the sorry state that they were marched from the jail



Captain James Cook claimed Australia for Britain

CRIME AND GRIME IN 18TH-CENTURY BRITAIN

People in 18th-century Britain used the term 'criminal' in much the same way we do today: someone who committed a crime and was taken to court was a 'criminal' and was referred to as such. It didn't matter if they were a starving waif stealing an apple from a grocer's stall for the first time, the branding didn't distinguish them from a highwayman, murderer or career house breaker. This wasn't just a semantic quirk, it was generally held that anyone who would stoop to commit a crime was already morally bankrupt and was starting a spiral down into a life of villainy, if they weren't there already there.

There was a real underclass of criminality that had developed as a result of a justice system that didn't believe in rehabilitation and simply flogged, branded, executed or gave hard labour to miscreants and hardened lawbreakers alike. In the filthy, crowded cities of 18th-century Britain and with no social security net or hint of state support short of the dreaded workhouses, certain types of criminal stuck together. Prostitutes, beggars, thieves, con men (or mountebanks, as they were known) and more, benefited from a hierarchy that was formed, from which a kind of 'master' criminal was drawn.



Admiral Arthur Phillip was the first governor of New South Wales, and founder of Sydney

"Regardless of crime, age, ethnicity or gender, nearly all were malnourished, lice-infested and wearing rags"

in suggested otherwise. Regardless of crime, age, ethnicity or gender, nearly all were malnourished, lice-infested and wearing barely enough in the way of moth-eaten rags to hide their modesty. It enraged Philip that not only was the government denying him the skilled labour he would need to effectively establish a colony, but the rag-tag dregs of Britain's gaols had been half-broken before they had even left the shore. Nevertheless, he was neither going to be delayed nor disheartened, and so Philip saw the First Fleet through what would have been a distinctly unpleasant eight-month journey to a harbour 12 kilometres (7.5 miles) south of modern-day Sydney, stopping off at South America and South Africa along the way.

The last of the fleet landed at its final destination in Botany Bay relatively intact, on 20 January 1788. None of the ships had been lost on the journey and only 48 of the would-be colonists had died, a remarkably low statistic for the time.

However, the new colony was nowhere near

the paradise that explorer Captain James Cook, who charted the region on his 1772-1775 voyage, had painted. Cook arrived during the month of May and had named the natural harbour for the diversity of its vegetation, also noting its abundance of fish. But at the height of the Australian summer when the First Fleet arrived, the land was withered and the stingrays Cook had talked about were nowhere to be seen. The shallow bay also prevented the ships from dropping anchor close to the shoreline, so conditions for a fledgling colony on shore were far from ideal. The water was mostly brackish, the bay's topography would make it difficult to defend and the soil was poor with slim potential for growing crops from the grain they had brought with them. At least there were plenty of strong trees and the natives, an aboriginal clan called Cadigal, weren't hostile. But the fear of attack from aboriginals or foreign powers looking to usurp his claim to the land led Arthur Phillip to search elsewhere. He took a small party of three boats north the next day to discover a much more suitable, sheltered site for a colony with fertile soil and fresh water. Cook had called it Port Jackson but hadn't entered the harbour, so Phillip took the liberty of renaming it Sydney.

It wasn't just the dregs of the prisons that had been upended into the First Fleet. One particular thorn in Phillip's side was the prickly Major Robert Ross. The Scottish marine had a reputation for having a hair-trigger temper, but it wasn't until Phillip was trying to set up the colony that he discovered just how insubordinate he could be. He refused to allow marines under his command to supervise convicts or to sit in court on convict trials, he was lazy, quarrelled with his officers and commanders alike and generally made Phillip's job of governing the colony more difficult. Phillip had already instructed his lieutenant, David Collins, to take a small party of seven free men and 15 convicts to Norfolk Island, a small island 1,412 kilometres (877 miles) directly east of Australia. They arrived a month after the settlement of Sydney and over the course of a year, more convicts were sent to help with what appeared to be a promising industry.

Perhaps to avoid outright conflict as much as the need for a military presence on the island, Phillip decided to send the surly major over to Norfolk with a retinue of marines in 1790. It was not a successful relocation. Ross continued to argue with Lieutenant Governor Collins and his own men. He declared martial law for four months after the 540-ton HMS Sirius attempting to bring over a company of marines escorting convicts was wrecked on a coral reef. No lives were lost but the ship and all its provisions perished, which only piled the pressure on the islanders. In the space of

WHO WERE THE FIRST 'POMS'?

Three notable convicts who were transported



THE FERRYMAN

Crime: Stealing sugar

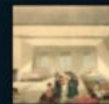
Jamaican-born Billy Blue was sentenced to seven years' transportation in 1796 that saw him leave for Botany Bay in 1800. He finished his sentence and became a ferryman across Sydney Harbour, married in 1805 and had six children.



THE 'WILD WHITE MAN'

Crime: Receiving stolen goods

Former soldier William Buckley managed to escape incarceration when he arrived in Australia. Buckley was 'adopted' by a friendly tribe of aboriginals, the Wathaurung, who believed he was the returned spirit of a recently deceased tribesman, and became a respected member of their community.



MOTHER AUSTRALIA

Crime: Stealing a frock

Mary Ann Wade was the youngest convict sent aboard the second fleet at 11 years old, after her death sentence was commuted to transportation. On arrival she was taken to Norfolk Island where she later had two children. Her descendants today number in the tens of thousands.

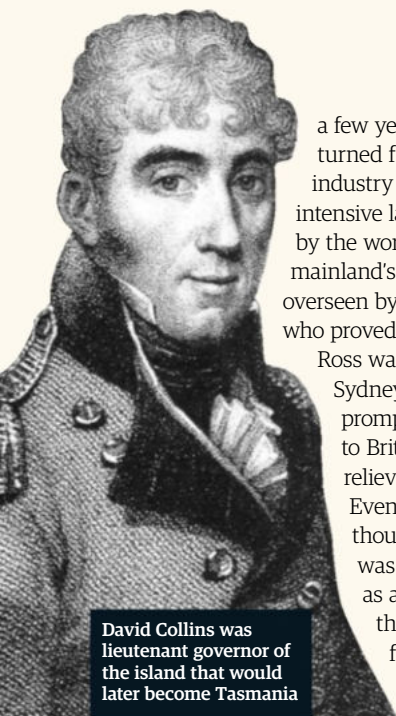


Captain Cook taking formal possession of New South Wales



HMS Endeavour, the British Navy research vessel commanded by Captain Cook

AUSTRALIA'S FIRST PENAL COLONY



David Collins was lieutenant governor of the island that would later become Tasmania

a few years, Norfolk had turned from a small cottage industry settlement to an intensive labour camp worked by the worst of the Australian mainland's criminals and overseen by military officers who proved difficult to manage.

Ross was sent back to Sydney in 1791 and was promptly deported back to Britain after being relieved of his command. Even after Ross left though, Norfolk Island was still used primarily as a prison island for the worst of the worst from the Australian mainland. The treatment of its

"Back-breaking work building roads and bridges could last anything from 14 to 18 hours a day, seven days a week"

convicts under the command of Governor Darling became even more brutal.

The system that Arthur Phillip set up aimed to extract the best use of every convict. A few cursory details like their place of birth, religion and physical marks like scars or tattoos were noted to identify them, before they were asked about their previous trade and level of literacy to establish their vocation. Extra labourers, providing they worked well, were always handy but anyone with a trade was valuable. As the penal colonies of Botany Bay and Sydney spread into Australia's rural regions, the trades of a Western civilisation became sought after. Now, not just carpenters, smiths and farmers were in demand, but housemaids, nannies, porters

and other servants were required for the free migrants seeking their fortune in a new country. Regardless of their background, every convict was assigned a trade: the educated were freed from menial labour and got off lightly with the job of helping with the island's administration, while the job of some wives and mothers was simply to help populate the colonies.

For those tasked with building the houses and infrastructure in the first few decades of the colonies, life was a shade tougher. Leg irons were widely used and the convicts' overseers wielded their whips liberally. Back-breaking work building roads and bridges could last anything from 14 to 18 hours a day, seven days a week. Though the aim

A DAY IN A CONVICT'S LIFE

The treadmill

Another form of punishment, some of the larger treadmills needed 25 convicts to operate them properly and had 24 steps. The average punishment was to complete 160 revolutions of the windmill.

A good flogging

Those convicts who didn't behave were subjected to different punishments. A common one was lashes with the cat o'nine tails, which would leave a convict's back in a very painful state.

Administrative duties

Not all of the convicts were employed in back-breaking labour. Those who could read and write would often work inside helping with the running and paperwork of the colony.

Dash for freedom

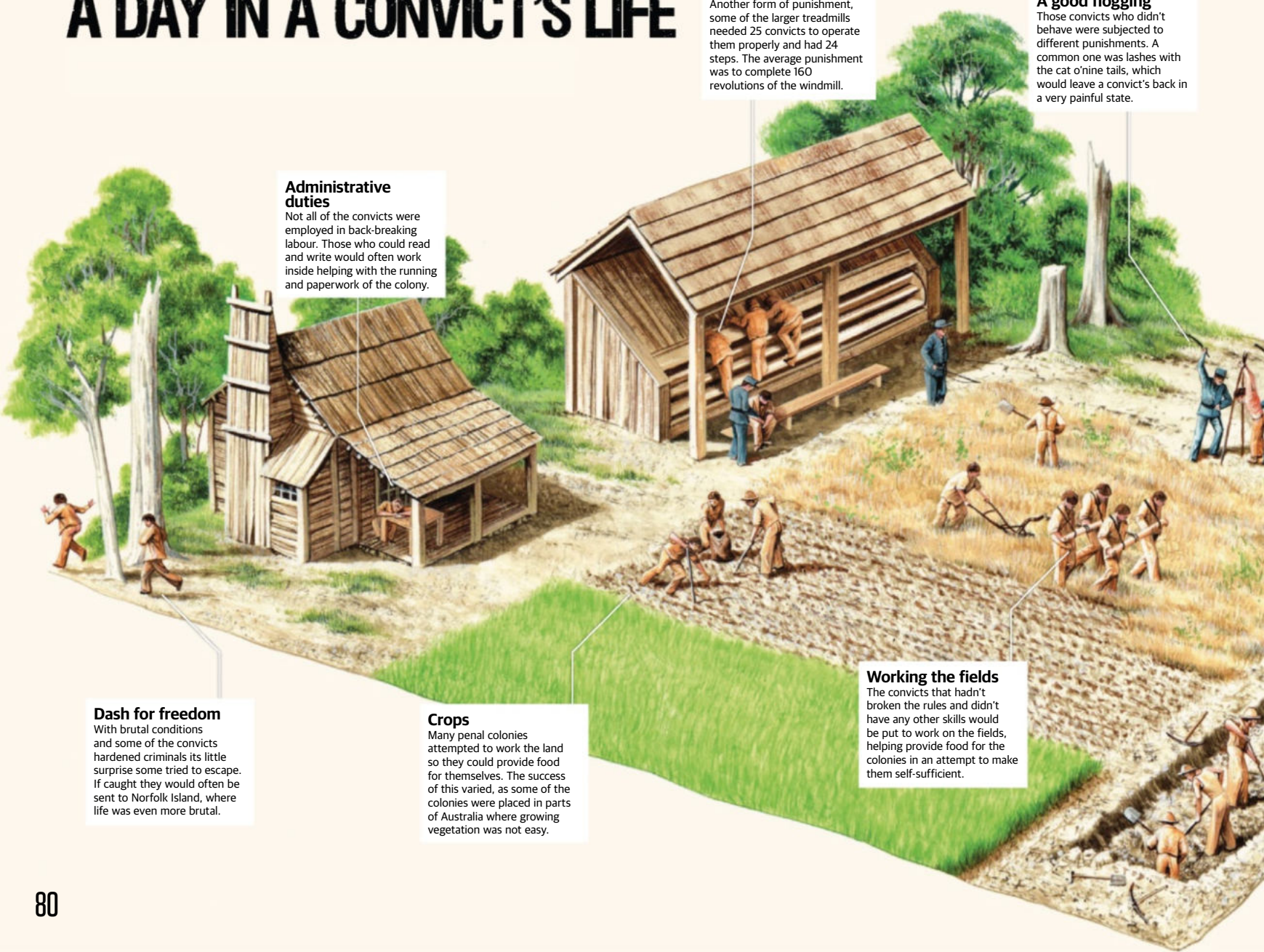
With brutal conditions and some of the convicts hardened criminals its little surprise some tried to escape. If caught they would often be sent to Norfolk Island, where life was even more brutal.

Crops

Many penal colonies attempted to work the land so they could provide food for themselves. The success of this varied, as some of the colonies were placed in parts of Australia where growing vegetation was not easy.

Working the fields

The convicts that hadn't broken the rules and didn't have any other skills would be put to work on the fields, helping provide food for the colonies in an attempt to make them self-sufficient.



JOURNEY OF THE FIRST FLEET



LONDON, BRITAIN

13 May 1787

A total of 11 ships carrying over 1,420 new colonists, over half of which were convicts, set sail on a journey to the other side of the world that would take more than eight months. Their supplies included a number of animals, including rabbits, pigs, horses and sheep... and rats, of course.



SANTA CRUZ, TENERIFE

3 June 1787

Having survived a planned mutiny that never saw fruition, the fleet arrived at the Spanish Canary Island of Tenerife to resupply with food and water, staying there for one week. One convict attempted to escape but they were generally well behaved.



RIO DE JANEIRO, BRAZIL

5 August 1787

The journey across the Atlantic to South America was notably hot and uncomfortable. Disease and parasites like lice and roaches spread, while water was rationed. As a result, a number of convicts died. When the fleet reached Rio, Admiral Phillip ordered the ships be thoroughly cleaned.



CAPE OF GOOD HOPE, SOUTH AFRICA

13 October 1787

Despite the punishment for lewd activities, promiscuity was rife aboard the ships, especially where the female convicts were allowed to exercise on deck. Undoubtedly, some had conceived children by the time the fleet had reached the southern tip of Africa, to resupply and pick up livestock for the new colony.



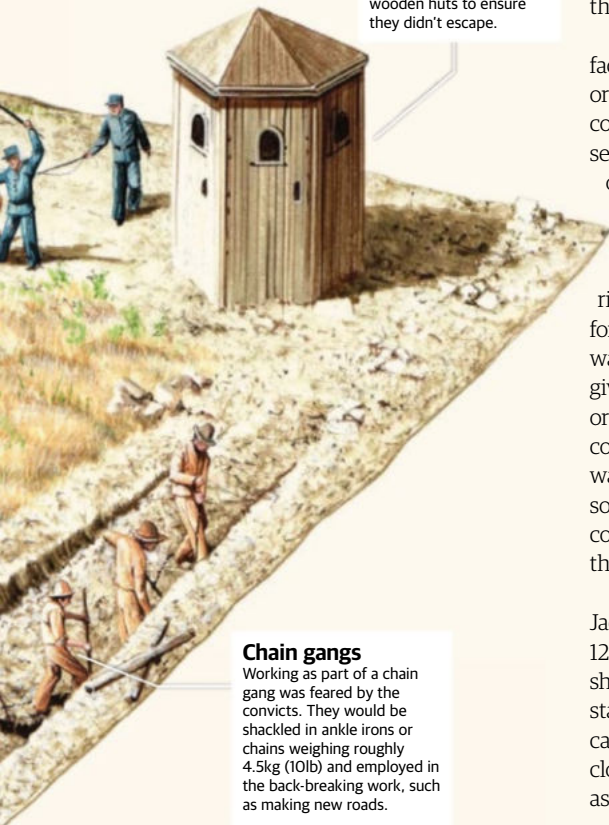
BOTANY BAY, AUSTRALIA

18 January 1788

Having braved the fierce gales that are found below the 40th parallel south, the first fleet made its way directly across the Indian Ocean to Australia, sighting Van Diemen's Land (now Tasmania) along the way before reaching Botany Bay on the east coast. It had travelled over 24,000 kilometres (15,000 miles), had lost only three per cent of the people it was carrying and not a single ship perished en route - an extremely successful result.

Watch hut

By day the convicts were supervised by a military guard and other overseers. At night they were locked up in small wooden huts to ensure they didn't escape.



Chain gangs

Working as part of a chain gang was feared by the convicts. They would be shackled in ankle irons or chains weighing roughly 4.5kg (10lb) and employed in the back-breaking work, such as making new roads.

- ostensibly at least - was to reform these convicts into new colonists by the end of their sentence and there was even a chance for them to earn their freedom for good behaviour, there was no doubt they were being punished for their crimes.

Those transported for more serious crimes could face the death penalty if they were caught escaping, or at the very least face even harder time as colonists on Norfolk Island. Neither did those servants who were assigned to the households of the free migrants have an easy time of it.

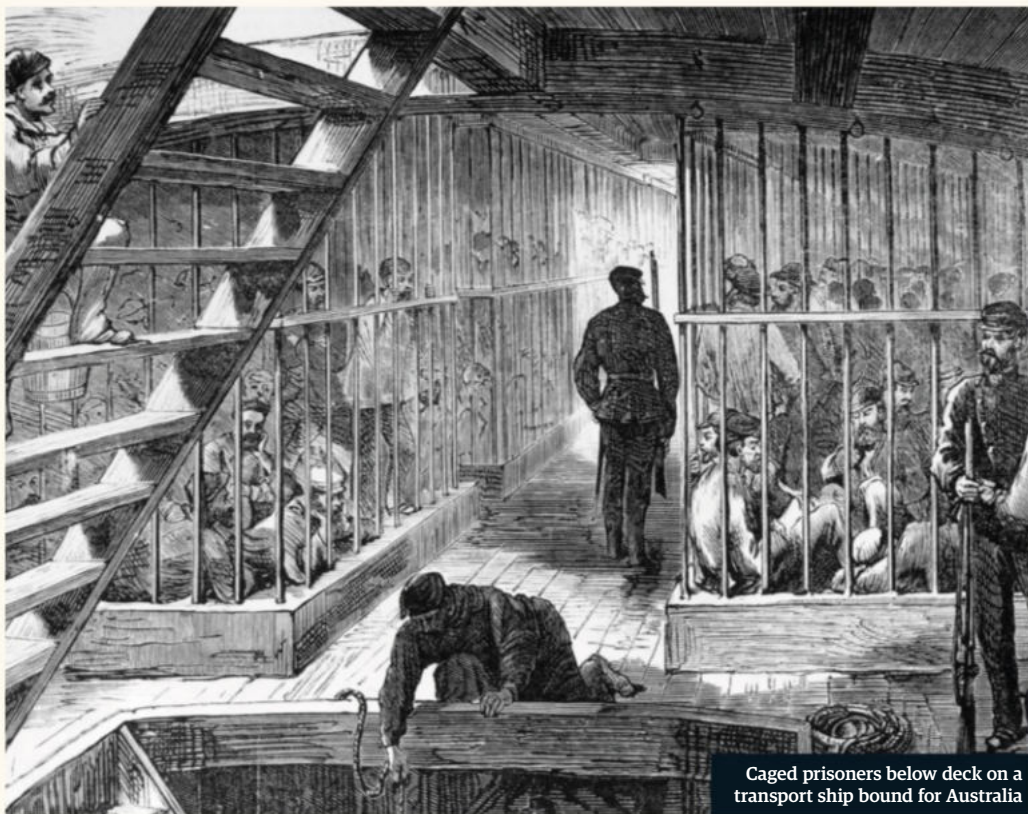
They were at the mercy of their masters and vulnerable to abuse.

Convicts weren't completely without rights, though. The colonial government paid for their food and clothes, so if a convict's master wasn't feeding or clothing them properly, was giving them disproportionate physical punishment or not allowing them enough rest, the convict could have their complaint heard. If the defendant was found guilty, the convict could be reassigned to someone else and their former master or mistress could lose their right to have convicts work for them at all in the future.

The female transportees of Botany Bay and Port Jackson were treated separately from the men - the 120-strong convict roster on one of the six prison ships of the First Fleet was entirely female, for a start. When they arrived, they were sent to a prison called a 'female factory', where they laundered clothes, sewed and spun while they were awaiting assignment. Many of the women transported to



Convicts on a ship bound for Botany Bay



Caged prisoners below deck on a transport ship bound for Australia

“Convicts had the opportunity to start again with a clean slate, to take advantage of the opportunities Australia offered”

NORFOLK ISLAND: PRISON WITHIN A PRISON

Three weeks before Admiral Phillip had set sail for Australia, he had received instruction from the government to set a colony up on Norfolk Island to prevent any foreign power, such as France, from claiming it for themselves. At around 35 square kilometres (13.5 square miles), it was easily large enough to settle on. It was an abundant source of pine wood and flax appeared to grow particularly well on the island too. Both of these resources were strategically important: the tall spruce pines for main masts and flax because it could be used to make sails.

Early on, as the island brimmed with settlers, it rapidly became apparent that no one had the required trade skills necessary to weave the flax. In addition, despite the stature of the trees on the island, the timber was too fragile to endure the rigours of a ship's main mast. The Norfolk colonists attempted to farm the land but with crops either failing in the briny wind or eaten by caterpillars and Polynesian rats, the islanders were on the verge of starvation.

Norfolk Island continued to be dogged by misfortune and bad management, and was abandoned in 1814 due to its high running costs and remote location. A second penal colony was established there ten years later under Governor Darling's incredibly punitive regime, becoming the place convicts were sent for committing further crimes or trying to escape their mainland duties. Conditions on Norfolk Island were so horrible that rebellion was almost inevitable and in 1834 an uprising involving hundreds of convicts ended after seven hours and was followed by sadistic reprisals.



GRIM PUNISHMENTS

What made Norfolk Island such a dreaded penal colony?

FLOGGING

A classic punishment taken to the extreme on Norfolk Island. Incredibly, legislation had to be brought about by the mainland government to limit the number of lashings a convict could receive in one sitting to 'only' 50. A flogging could be given for the slightest hint of insubordination and the sadistic island guards revelled in goading the convicts into committing an offence.

SOLITARY

Solitary confinement of around two weeks at a time would be awarded for the slightest of transgressions, carried out in a filthy cell 2.4m tall x 2.4m wide (8 x 8ft) called the 'nunnery'. Despite being called 'solitary', as many as a dozen people would be crammed into the cell and left there. In the hot climate, this hellish term must have felt like an eternity.

STARVATION RATIONS

While the mainland penal colony was relatively well fed, Norfolk's islanders could look forward to distinctly less luxurious fare. Governor Darling intended the colony to be as close a punishment to the death sentence that the convicts could receive. Giving just enough stale bread and water to misbehaving colonists to keep them alive and upright was one way of ensuring this policy.

Australia's first penal colony brought children with them or had given birth at some point during the eight-month voyage. Their babies stayed with them until they were weaned, at which point they were taken away and put into an orphanage, where they could be claimed back once the mother had earned her freedom.

While life was hard for everyone when the Botany Bay colony was established, it was undoubtedly a better fate than some of the convicts would have met back in Britain. Records show that the quality of a convict's food was much better in Australia than it would have been in Britain. For some, there were ripe opportunities abound in this new land, too. With Botany Bay and Port Jackson growing every year, free men and women began to migrate from Britain to seek their fortune and to take advantage of the cheap labour the penal colonies offered. If a convict behaved, adhered to the rules and served their time, they were free to go. They could buy their passage back to Britain if they wished, but most chose to stay and not just because of the high price of a ticket: the stigma of being an ex-con in Britain simply didn't exist in this new land. Convicts had the opportunity to start again with a clean slate, take advantage of the many opportunities that Australia offered a free, white European citizen and even climb the social ladder - something unthinkable back on British soil.

Over the following 50 years, public opinion would gradually turn against the Transportation Act as it became thought of as a particularly cruel form of punishment. In 1850, 17 years after slavery was finally abolished, transportation to the growing colonies in New South Wales was also abolished. But by then, hundreds of thousands of Europeans had settled in the new land, many of them changing their names and leaving a dark past behind them, setting the future course of this new Australian nation.

NEXT ISSUE

What's around the corner
for All About History?

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"I HAVE A DREAM"

The blood, sweat and tears behind
history's iconic speech



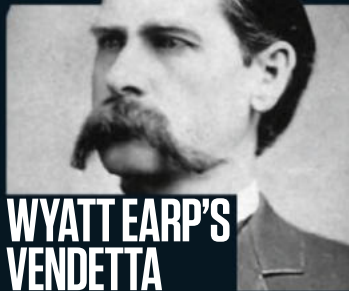
VIOLENT FIGHT FOR EQUALITY

The British Suffragettes battle
for the right to vote



HERO OF TRAFALGAR

The bravery and tactical
genius of Horatio Nelson



WYATT EARP'S VENDETTA

How a sheriff turned outlaw
to hunt his brother's killers

PLUS: History's greatest impostors **Aristotle** Renaissance tutor **Victoria Cross** act
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Shakespeare: Rebel with a cause?

WILLIAM SHAKESPEARE English, 1564-1616

Brief Bio

Born in Stratford-upon-Avon to glove maker John Shakespeare and landowner's daughter Mary Arden, William Shakespeare had three children with his wife Anne Hathaway. He moved to London in the late 1580s to pursue an acting career, becoming a prominent and prolific playwright and poet, producing an average of two plays a year until 1611 before retiring to Stratford.





Rebel with a cause SHAKESPEARE

He may be England's most celebrated writer, but did Shakespeare hide codes and double meanings in his work to subvert the establishment during a time of religious turmoil?

Written by David Crookes



Two guards grabbed him tightly and dragged him down a stone corridor, his shackled legs meaning he was unable to keep up the frantic pace they had set. He was determined to show no sign of weakness and tried to concentrate on the senses around him, such as the rats scurrying by his feet, the insects crawling on the walls and the warmth on his face from the burning torches that illuminated the short path.

How had things come to this? He was Robert Southwell, born into a good family and a man who devoted his life to God, being ordained a priest in 1584 in Rome. But what had been one of the best years of his life had also turned into one of the most bitter when later the same year, the 'Jesuits, etc Act' had ordered all Roman Catholic priests to leave England. They were given 40 days' grace to do so and many of his friends had hurriedly scrambled their belongings together and fled the island nation for friendlier shores. These were difficult times to be a Catholic in England.

Pain ripped through his body as the guards swung him around a corner and flung open a new cell door for him. Looking at the horrible conditions his mind raced back. Damn that Henry VIII, he thought. Damn him and his desire for a male heir and his lust for Anne Boleyn that had seen him turn his back on the Catholic faith he had been brought up in. And damn that German monk Martin Luther whose

actions had led the Protestant Reformation that had swept through Europe and ultimately been adopted throughout England.

Southwell was levered inside the cramped, dank space. He recognised it from the descriptions of others whose fate had brought them here; it was Limbo, the most feared cell within Newgate Prison, inside a gate in the Roman London Wall. The door closed and the guards walked away. His heart beating wildly with fear, he reflected on his decision to leave Rome in 1586 to travel back to England to work as a Jesuit missionary, staying with numerous Catholic families, thus becoming a wanted man.

Eventually, the door swung open and he was dragged out of his cramped cell. He could barely stand as he was taken to trial, hauled before Lord Chief Justice John Popham and indicted as a traitor. He defiantly laid out his position, admitted to being a priest and his sentence was passed. He was, Popham said, to be hanged, drawn and quartered. After being beaten on the journey through London's streets he was forced to stand. His head was placed in a noose and he was briefly hanged. Cut down while still alive, his bowels were removed before his beating heart was dragged from his body and he was cut into four pieces. His severed head was held aloft. This was England in the late-16th century - Queen Elizabeth's religious compromise wasn't without its share of pain and suffering.

Shakespeare: Rebel with a cause?

This was the world William Shakespeare lived in as he wrote his great works. He had moved to London from Stratford-upon-Avon in 1587, leaving behind his young family to pursue a career as an actor and a playwright with the troupe Lord Strange's Men. He had married Anne Hathaway in 1582, when he was 18 and she was 26, and together they had three children, Susanna, Hamnet and Judith. But the lure of the stage had been too strong to ignore.

It had not taken Shakespeare long to make a name for himself. His first play, *Henry VI, Part I*, written in 1591, made its debut a year later. It was successful enough to make fellow playwrights jealous. One of them was Robert Greene, arguably the first professional author in England. Unlike Shakespeare, he was university educated and urged his friends not to give Shakespeare any work, calling him an 'upstart crow.' Shakespeare was unmoved by such words. It would be, academics conferred later, a sign he was making his mark.

By 1594, he had written more plays and seen both *Venus and Adonis* and *The Rape of Lucrece* published. He dedicated them to his patron Henry Wriothesley, the Earl of Southampton. He liked the Earl. Southampton was from a long Catholic dynasty and he appreciated poetry and theatre. When the theatres re-opened in 1594 following an outbreak of bubonic plague, he was keen to invite the Earl along. After all, Shakespeare's new troupe, Lord Chamberlain's Men, was becoming popular, with them even invited to perform in the royal court of Queen Elizabeth I. Shakespeare had also bought shares in Lord Chamberlain's Men and was becoming a powerful and influential figure.

The Reformation had changed England's approach to religion, moving the country away from its Catholic roots and into the arms of Protestantism. But it had not been as peaceful a transition as is sometimes painted. Protest leaders who encouraged more than 30,000 priests, gentry and commoners to demand a return to Catholicism in 1536 had been executed. Two years later, reformers had banished the cult of saints, destroying shrines and banning the population of England from making pilgrimages. Riots in 1549 were repressed in the most vicious of ways - the reformers would hang priests from church towers and lop off the heads of laymen who refused to obey the new order.

All this affected the Bard; he wasn't writing in a bubble and nor were the actors who performed his work. Clare Asquith states in *Shadowplay: the Hidden Beliefs and Coded Politics of William Shakespeare*: "Shakespeare's family are thought to have been Catholics [...] his early years would have echoed to angry discussions of the impact of fines and imprisonments, the liberties taken by the Queen's commissioners, the wreckage under Edward and the wicked errors of the old King."

Speaking out against the establishment was hard - not least for those who wanted to keep their heads. Anyone wanting to put across another point of view had to be smart and Asquith believes the man who would go on to be England's most celebrated poet and playwright rebelled and devised a secret

"Queen Elizabeth's religious compromise wasn't without its share of pain"

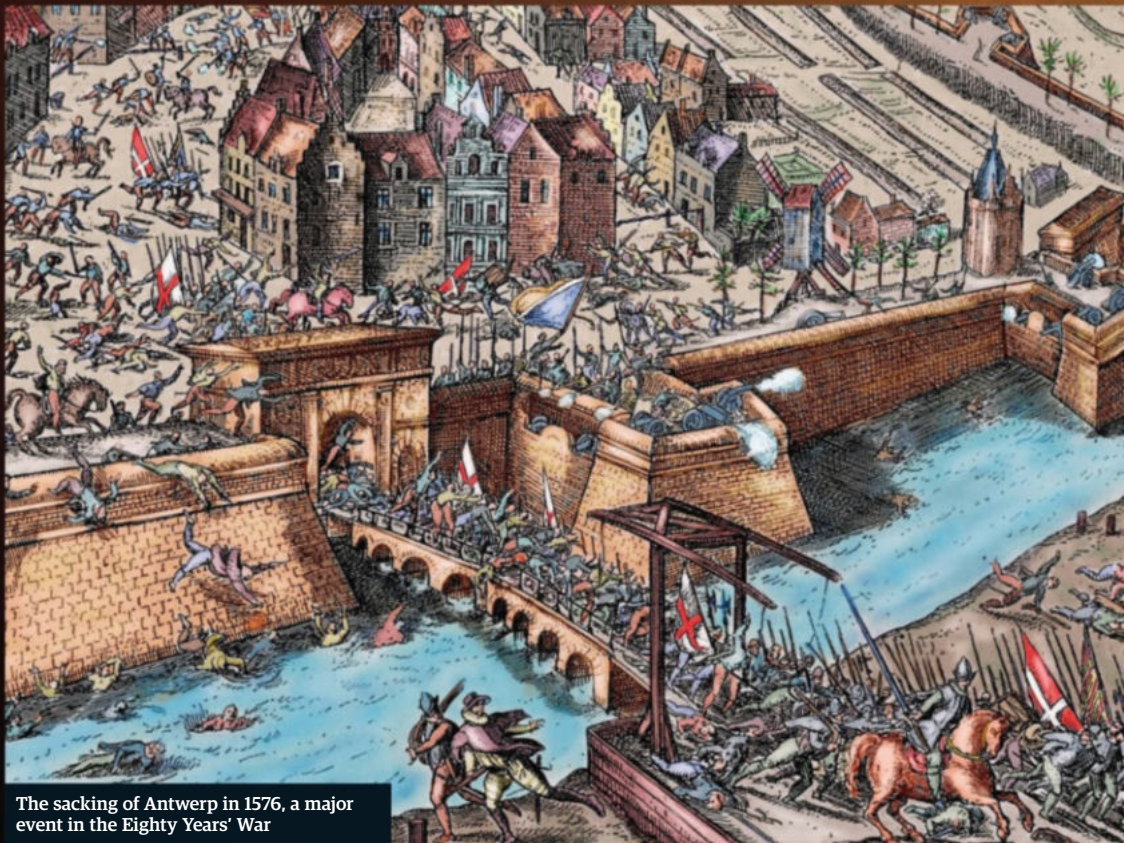
code, inserting messages and double meaning into his writing. It isn't as outlandish as it may sound; cryptology had been used since ancient times and there were examples of secret codes being used in this time period. For example, it is known that Mary, Queen of Scots used a cipher secretary called Gilbert Curle to handle her secret correspondence. It wasn't entirely sophisticated, though, so her plot to overthrow Elizabeth was soon uncovered - Catholic double agent Gilbert Gifford intercepted letters that had been smuggled out in casks of ale and reported them to Sir Francis Walsingham, who had created a school for espionage.

For Catholics, certain words and key phrases stood out. For example, 'tempest' or 'storm' were used to signify England's troubles, according to Asquith. So Shakespeare may well have been convinced he could change people's view of the world by writing on an entertainment and political and religious level.

First he had to work out exactly what message he wanted to put across. Philip II of Spain, who had married Mary I, felt England's Catholics had been abandoned and there had long been a promise that, if the Catholics bided their time, help would come. Relations between Spain and England had declined to an all-new low. This culminated in the sailing of 122 ships from Spain in 1588 with the aim of the Spanish Armada being to overthrow Elizabeth I and replace the Protestant regime.



The Spanish Armada tried to overthrow Elizabeth I's rule in England with a massive naval assault



The sacking of Antwerp in 1576, a major event in the Eighty Years' War

SHAKESPEARE'S PRESSURES AND INFLUENCES

What were the factors which helped, motivated and threatened to break the Bard?

Religion

With the death of Mary I and the accession of her half sister Elizabeth I, the religion of England changed. Elizabeth took the country towards Protestantism. It is hard to overstate just how an important part of everyday life religion was during Shakespeare's lifetime. During the course of the Bard's life people believed so strongly in either Catholicism or Protestantism that they refused to recant their beliefs even when they were burned alive at the stake.



Politics

Two main forces were at play during Shakespeare's lifetime in England: the monarch and religion. The monarch held ultimate power over the life of their citizens, literally the power of life and death. Staying on the right side of those in power was obviously a strong influence on the Bard and his plays as it was vital for his career and for his life that he remained in the good graces of those in power.



Social mobility

For centuries, English society had been a feudal one with a very clear distinction between the upper and the lower classes. During the Bard's lifetime, this began to change and a middle class was beginning to emerge – social mobility was increasing, meaning you no longer had to born a peer to become a person of wealth and influence. Shakespeare himself is an example of this as, although born to a good family, he climbed the social strata through his success. His own social mobility and that going on around him was an influence on his work.



James I

Previously James VI, King of Scotland, the union of the Scottish and English crowns made him the ruler of both countries, as well as Ireland. He solidified Protestantism and sanctioned the *King James Version* of the Bible in 1611. James was a great admirer of poetry, drama and art and it is believed Shakespeare wrote *Macbeth* to win his favour and, much as he did with Elizabeth, sometimes wrote to flatter one of his main patrons. Formally the Lord Chamberlain's Men, the Bard's troupe changed their name to The King's Company and received more money and performed more regularly for James than they had for Elizabeth.



Elizabeth I

One of England's golden monarchs returned England to Protestantism but allowed some Catholic traditions to continue and argued for greater toleration than her sister Mary had. Much of her reign coexisted with that of Shakespeare and the Bard and his work became known to the queen and she became one of his patrons. She was undoubtedly a major influence on him and some of his poems and plays contained passages directly aimed at pleasing her.



Playwrights and poets

Like all creative writers, Shakespeare was heavily influenced by the great writers that had gone before him. Chaucer, one of England's greatest poets, was a major influence as seen by the fact that several of the Bard's works were based on Chaucer poems. Greek writer Plutarch also provided inspiration for his works and Shakespeare sometimes copied whole passages of his work, with only minor alterations.



Shakespeare: Rebel with a cause?

The Armada was defeated but it had succeeded in creating further religious and political divisions, so the authorities were on even greater alert. Within this world Shakespeare got to work and, at first, kept things simple. "My reading is that the early plays were light, comical, critical and oppositional, written for Lord Strange's Men", asserts Asquith. The earliest plays addressed political reunion and spiritual revival. Their plots related to divided families, parallels for an England cut in two.

Asquith believes the Bard placed certain markers in his texts that signalled a second, hidden meaning.



RELIGIOUS COMPROMISE?

With the untimely death of King Edward VI in 1553, struck with fever and cough that gradually worsened, Mary I ascended to the throne and set about calling a halt to the Reformation. She swung England firmly back towards Catholicism, causing reformers to run scared and flee. Among those displaced was civil servant William Cecil, his relief of a lucky escape palpable as he heard of the 273 Protestants burnt to death under Mary's reign. Terror had been brought on the Protestants but Cecil had the ear of Elizabeth, who he had known for years. She had embraced the Church of England, so much that she had been imprisoned for two months in the Tower of London by her half-sister Mary, who feared she was part of a plot to depose her.

When Mary died in 1558, Cecil wanted to return to a Protestant England. Queen Elizabeth succeeded the throne since Mary had born no child and Cecil became her advisor. Within the year, a uniform state religion had returned. Elizabeth was confirmed as Supreme Governor of the Church of England.

The Act of Uniformity in 1558 set the order of prayer in the *English Book of Common Prayer*. Crucifixes and candlesticks were to be allowed, although new bishops protested. But Protestants who had fled returned and wanted their religion to be supreme. Cecil ensured Catholics would be excluded from public life although he allowed them to worship as long as they did not threaten the queen and did so discreetly. Catholics who rose would be dealt with in the most serious of ways.

He would use opposing words such as 'fair' and 'dark' and 'high' and 'low': 'fair' and 'high' being indications of Catholicism while 'dark' and 'low' would indicate Protestantism. Asquith takes this as reference to the black clothes worn by Puritans and to the 'high' church services that would include mass as opposed to the 'low' services that didn't. If this theory is true - a matter of some debate - then it enabled Shakespeare to get specific messages across, using characters to signify the two sides and by using words commonly associated with Catholic codes. For example, according to the theory, 'love' is divided into human and spiritual and 'tempest' refers to the turbulence of the Reformation and Counter-Reformation and the Bard used his own terms to disguise a message that was pro-Catholic.

At the same time, Shakespeare was operating in establishment circles. "He was drawn into the orbit of the court and wrote elegant pleas for toleration to Elizabeth, in the elaborate allegorical language she was used to", says Asquith. But England was becoming more violent again. Shakespeare's patron, the Earl of Southampton, rebelled against Elizabeth I, becoming Robert, Earl of Essex's lieutenant in an attempt to raise the people of London against the government.

The Essex faction had ordered a performance of the 'deposition' play *Richard II* just before the rebellion and Shakespeare's company had their work cut out afterward denying complicity. The plan ended in failure in 1601, but in that same year, Shakespeare wrote *Hamlet*, encouraging action against unjust rule. "His more critical work supported the cause of the Earl of Essex against the [William] Cecil regime", says Asquith. If this is true, then Shakespeare really was one of the defining rebels of the period.

Critics have said for decades that the writer was against populist rebellions and supported authority and the rule of law, "but with the recent reassessment of the extent of dissidence at the end of Elizabeth's reign, Shakespeare's Elizabethan work begins to seem more oppositional", Asquith argues.

"What if the authority he upholds was not that of the breakaway Tudor state, but of the European church against which Henry VIII rebelled?" she asks. "What if he sympathised with the intellectual Puritan reformers, who felt secular monarchs like the Tudors had no business assuming spiritual authority over individual conscience? What if he, like so many contemporaries, opposed the destruction of the old English landscape, from the hostels,

"He devised a secret code, inserting messages and double meaning into his writing"



The religious upheaval before and during Elizabeth I's reign saw many people executed



CODEBREAKING THE BARD'S PLAYS

Claire Asquith on the secret codes she believes are imbued within Shakespeare's works



TITUS ANDRONICUS

Synopsis: Written between 1588 and 1593, the play is set in the latter days of the Roman Empire. Bloody in the extreme, the play explores the life of a fictional Roman general, Titus, caught in a vicious circle of revenge with the queen of the Goths, Tamora.

Rebel? Shakespeare appears to be pleading for calm among England's dissidents, having written a play that highlights suffering and repression while arguing the case against a violent rebellion. The message, claims Asquith, is very much about biding time, waiting for help in the guise of a promised invasion and, as such, it mirrored the rhetoric of Catholic leaders who stressed England would be saved via diplomacy or invasion rather than an internal uprising. "It is a gory portrayal of just the kind of state atrocities conducted in the mid-1590s, and in the previous reign as well. Yet it discourages equally bloody revenge", says Asquith.



TAMING OF THE SHREW

Synopsis: Written between 1590 and 1592, the courtship of Petruchio is at the heart of the play. It shows his attempts to tame the wild Katherina, a girl he loves but is rebuffed by until he manages to win her over.

Rebel? Displaying evidence of the 'high-low' opposition language that Shakespeare used to refer to Catholics and Protestants, Katherina is "brown in hue." Her sister is called Bianca, meaning 'white' and she is the respectable one of the two. This paints Katherina to be like a reformer and in need of being brought into line. Asquith says the "oddly political language" used by the chastened shrew is "meant to alert us to the play's secondary level." For those accustomed to finding deeper meanings, the message would have been obvious, according to her. She says: "The play shows England as a warring family, the monarch helpless to stop vengeful puritans baiting afflicted Catholics."



KING LEAR

Synopsis: The tragedy is set in the court of an ageing monarch. He wants to pass the monarchy to his three daughters and asks them to prove they love him the best but one cannot so he splits it between two before falling into madness.

Rebel? Lear's actions caused a tumbling effect as various people were banished, reunited, imprisoned and heartbroken. Asquith claims this is an "unvarnished dramatisation of the state of James' England, a final attempt to awaken the King to the intolerable humiliations and sufferings of his Catholic subjects." She tells us the message within is clear: "If you exile true Christian spirituality - and both puritans and Catholics were exiled - the country descends into amoral anarchy." She adds: "It is worth noticing that though he discourages mob-led rebellion, he includes nine invasions in his work, and they are all portrayed as positive events."



THE WINTER'S TALE

Synopsis: Suspicious that his childhood friend is his pregnant wife's lover, Leontes accuses his wife of infidelity and having an illegitimate child. Having ordered the newborn baby to be abandoned, he is later reunited with her, much to his delight.

Rebel? With the play believed to have been written in 1611, this was one of Shakespeare's later plays and it appears to contain a strong message: "After all the post-reformation trauma, the spirituality that was lost turns out to have been secretly preserved", says Asquith. As with *The Tempest*, *Pericles* and *Cymbeline*, *The Winter's Tale* started with suffering and ended with happiness. It showed a transition that could put past remorse to bed, highlighting the possibility that evils can be defeated and overcome and that a true home can be found for spiritualism if it is wanted. It would have encouraged the audience to keep the faith and not give up hope.

colleges, monasteries and hospitals to the rich iconography of churches to local roadside shrines and holy wells?"

It can be argued that the Bard personified England itself so that he could explore just why the ideas behind the Reformation had taken hold, presenting it as gullible and deluded, willing to turn its back on spiritual heritage, with the play *Two Gentlemen Of Verona* cited as evidence of this. The more elaborate plays retained the puns, wordplay and double meanings so beloved of audiences in Elizabethan times, but Asquith notes that some of Shakespeare's characters came to be increasingly dramatic and allegorical; they had a hidden spiritual meaning that transcended the literal sense of the text.

When King James assumed the throne in 1603, Catholics had assumed that he would lend them

greater support than Elizabeth, given that his mother was a staunch Catholic. But that was not to be and Shakespeare must have been well aware of a growing political and religious resentment against the monarchy, with a feeling of rebellion growing. His plays in this period became more cynical, which some have speculated was a consequence of the world he was living in.

Matters came to a head with an explosive event in 1605. Five conspirators, Guy Fawkes, Thomas Wintour, Everard Digby and Thomas Percy hired a cellar beneath the Houses of Parliament for a few weeks, spending time gathering gunpowder and storing it in their newly acquired space. Their plan was to blow the building sky high, taking parliamentarians and King James I with it. But their cover was blown and Guy Fawkes was taken away to be tortured into confession, the deadly rack being the instrument said to have broken him. He was sentenced to be hanged, drawn and quartered.

At around the same time, Shakespeare wrote *King Lear*, *Othello* and *Macbeth*, all plays warning against unjust and persecuting rule, which many



A depiction of Macbeth from William Shakespeare's play of the same name

"Their plan was to blow the building sky high, taking parliamentarians and King James I with it"



The Gunpowder Plot was a politically and religiously charged conspiracy to blow up the Houses of Parliament

Catholics felt James I was guilty of. "My own theory is that Shakespeare, though not an outright rebel, used his increasingly privileged position to address the court and the crown, both Elizabeth, and James, on the issue of religious toleration", Asquith asserts. "He protested against the persecution and injustice perpetrated in the name of the monarch, and pleaded for religious toleration."

Such an assessment revises the prevailing thinking that Shakespeare wrote universal plays and avoided any topicality. Some literary scholars remain hostile to the idea that the playwright was involved in the volatile religious issues of the day, but could he really have ignored what was going on around him? It's plausible that he wanted to do more than merely shake the literary world; he wanted to influence politics and religion, to affect his society.

When he sat at his desk, overlooking the squalid, filthy conditions of London, William Shakespeare may have been looking out at a more enlightened nation than ever before, but it was still a city and a country where the screams of religious and political prisoners filled the corridors of cramped jail cells as torturers extracted forced confessions. This sobering reality was a stark reminder of the perils of religious divisions that continued throughout Shakespeare's life. Was it a society that he rebelled against in his own way? The final and definitive answer to that, like some of the great man's work, is unfortunately lost to the ages.

SHAKESPEAREAN THEORIES

He didn't really write the works

The authorship of Shakespeare's work has been the subject of debate for decades. With no original manuscripts, no mention of him even being a writer in his will and a command of Latin, Greek and other languages that would belie his apparent poor education, many believe that Edward de Vere, the 17th Earl of Oxford was the writer rather than the small-town boy from Stratford. And if not him, then one of 80 other historical figures that have been mentioned over the years, such as Marlowe.

He didn't even exist

Some scholars believe that the Shakespeare revered today as a playwright was actually a fictional character. They believe that the few documents relating to him were actually for a man called William Shaxper or Shaksper who was born in 1564, married and had children but became an actor and remained in such a role until his retirement. Certainly, Shakespeare's death appears to have been unmarked. Had Shakespeare been such a prominent playwright, there would surely have been many documents mourning his passing, critics say.

He was an Italian

Those who argue Shakespeare was not quite who he claims he was are called anti-Stratfordians. One of their theories is that Shakespeare - or Michaelangelo Florio Crollalanza - had moved from Sicily to London, fearing the Holy Inquisition. The family name of Crollalanza was translated and became Shakespeare. Sicilian professor Martini Iuvara claims to have proof and mentions the Sicilian play *Tanto Traffico Per Niente* written by Crollalanza. It can, he claims, be translated into *Much Ado About Nothing*.



Lord Chamberlain's Men, Shakespeare's famous troupe, performed for Queen Elizabeth I

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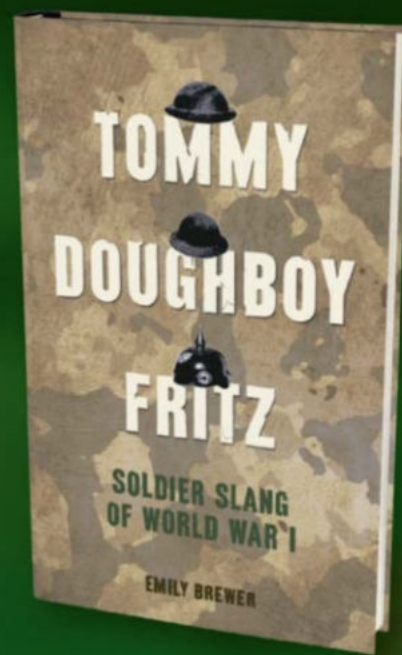
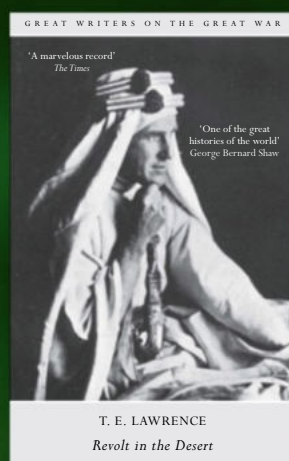
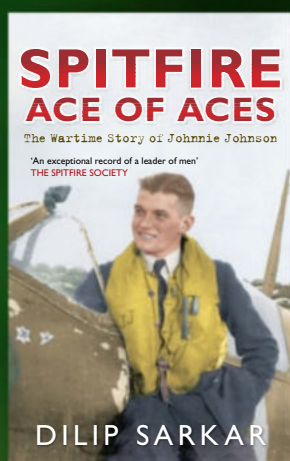
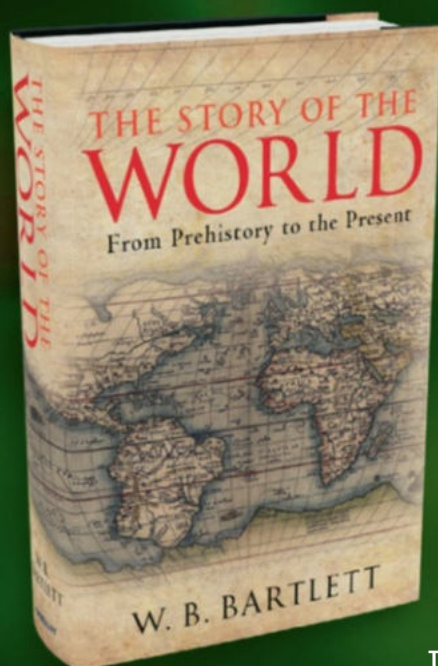
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REVIEW ROUNDUP: BATTLES

Our pick of some of the most interesting books, films and apps directly related to battles



BOOKS

MEDIEVAL

An Onslaught Of Spears

Author: Jeffrey James

Publisher: History Press

Spanning more than 200 years of Viking attacks on English shores this book contains a lot of information. Starting in the 8th century and ending with Cnut's victory in 1016, military historian James' work isn't light reading but the story contains enough fascinating characters, such as Swein Forkbeard, to keep the reader entertained as well as informed.

WWII

Attack On Pearl Harbor

Author: Alan D Zimm

Publisher: Casemate

It would be easy for a book on this subject to go through the motions and regurgitate already known information in a slightly different way. Thankfully, Zimm has not done this and uses primary and secondary sources, approaching the topic from a mainly Japanese viewpoint which examines their planning and execution and makes for interesting reading.

NAPOLEONIC

Battle Story Austerlitz 1805

Author: Gregory Fremont-Barnes

Publisher: History Press

Napoleon is regarded by many as the greatest tactical military commander who ever lived, and his Battle of Austerlitz, against Russian and Austrian forces, is frequently seen as the greatest display of his genius. Covering the run-up to the war, the composition of the armies and the battle itself, this is a focused look at one of the French general's greatest victories.

OVERVIEW

The aptly titled *Battle: A Visual Journey Through 5,000 Years Of Combat* is a visual treat for the reader with some truly beautiful images and illustrations. Covering everything from the first chariot battles of the ancient world, the swords-and-shields combats of the Middle Ages, to brutal world wars and modern-day conflicts, no proverbial battle stone is left unturned. Although, by its very nature, it doesn't cover any conflict in great depth, it is still a great gift for anyone interested in military history.



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Frank McLynn - William may have conquered Hastings but that wasn't the only battle in England that year. McLynn also examines the battle involving Viking warrior Harald Hardrada.



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Napoleon: Soldier Of Destiny
Michael Broers - Drawing on all of his available correspondence, this biography paints a picture of an intense and disciplined figure determined to make his mark on the world.



THE LONGEST DAY

Year: 1962

Directed by: Darryl F Zanuck

This classic film tells the story of the D-day invasion of Normandy in WWII through dozens of different characters. Some of these characters only appear briefly while others - such as those played by stars John Wayne and Richard Burton - enjoy more screen time. Together, all of these stories are woven together to tell the story of numerous separate invasion points that made up the historic operation.

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Using the Hundred Years' War when England and France faced off as its base, this RPG puts you in control of an army. With the option to play as either of the two forces and with up to 20 squads at your command, this app is nicely detailed.

GETTYSBURG BATTLE APP



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This app covers one of the key battles of the American Civil War. 'Virtual signs' that can be clicked on provide more information, such as audio accounts from historians, photos and a whole host of interesting facts.

WARS OF THE ROSES



iOS 4.2+ Free

Set in the war for the English crown between the Houses of York and Lancaster. Playing in one of three different difficulty settings, the objective of the game is to seize the crown using strategic thinking. The app includes the option of playing with your friends online with a multiplayer mode.

TELEVISION AND FILMS

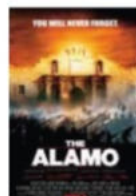
MEMPHIS BELLE



Year: 1990
Directed by: Michael Canton-Jones
In WWII, if a bomber plane completed 25

missions, the crew had the option of returning home. The film tells the exploits of a bomber crew about to fly their 25th mission. The film may be overly sentimental at times, but is suitable for children and a good introduction into the world of WWII.

THE ALAMO



Year: 2004
Directed by: John Lee Hancock

Not exactly greeted with rapturous

enthusiasm on its release ten years ago, time has been a little kinder to this drama. It details the 1835-1836 Texas revolution and, specifically the siege of the Alamo when 183 men were besieged by a Mexican army of almost 2,000 men. Undeniably cheesy in parts, but it is still good fun.

CHARGE OF THE LIGHT BRIGADE



Year: 1936

Directed by: Michael Curtiz

Not one for historical purists, this film is focused purely on entertainment. Errol Flynn,

at the time one of Hollywood's biggest stars, looks dapper and suitably heroic.

EDITOR'S PICK

Its politics may be more than a touch questionable now, but there's no denying that 1964's *Zulu* packs an emotional punch and features fantastic action sequences. As the 100 or so British forces try and stand firm against 4,000 Zulus at Rorke's Drift, the differing tactics between a Royal Engineers officer and a lieutenant (Michael Caine) provides another layer of detail. Caine is superb in his first major screen role.

The film doesn't portray the Zulus as savages but shows their honour and dignity. While the final salute they made in the film is a good note for the movie to leave on it didn't happen - they actually returned to finish off the British troops but retreated when they noticed a relief column approaching. Despite playing fast and loose with some historical fact this is an engrossing account of one of history's great military stands.

"These stories are woven together to tell the story of five separate invasion points"

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HISTORY ANSWERS

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Christopher Columbus was not the first person to discover America

CHRISTOPHER COLUMBUS

Italian, 1451-1506

Brief Bio

An Italian navigator, explorer and colonialist, Columbus famously landed in America while on a Spanish expedition to find a new route to Asia. As well as leading four voyages across the Atlantic, he served as governor of the Indies. Following accusations of tyranny in 1500, he returned to Spain, where he died at 54 years of age.

Why was the Great Wall of China built?

Peter Williams, Bristol

The Great Wall of China was built to keep out raiding parties of nomadic tribes, such as the Mongol, Turic and Xiongnu, from modern-day Mongolia and Manchuria. It is the longest man-made structure in the world, at 21,196 kilometres (13,170 miles) long. The first emperor of China, Qin Shi Huang, is often considered the father of the Great Wall, but before he united the nation in 221 BCE, individual states built walls to keep out invaders as early as the 7th century. Qin connected, lengthened and fortified the walls to protect the northern border between 221 BCE and 206 BCE. Subsequent dynasties, most notably the Ming, maintained and rebuilt it.

Always maintained as a military defence – at its peak the Ming Wall was guarded by more than 1 million men – the Wall evolved other uses. Aside from being a transportation corridor, it was used to regulate trade, such as collecting duties on goods transported along the Silk Road. It was also used to restrict both immigration and emigration.

Who discovered America?

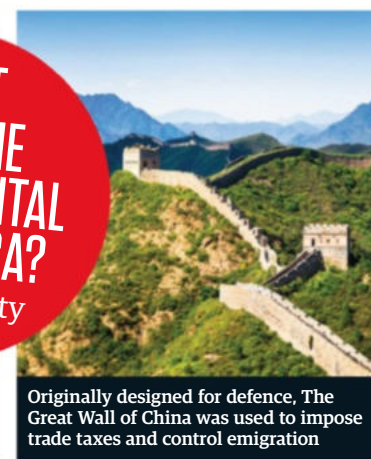
David Phillips, York

The conventional wisdom is that Columbus was the first person to discover the Americas, but we know this wasn't true as he met indigenous tribes when he came ashore in 1451. Ancestors of modern-day Native Americans travelled from East Siberia to the New World during the Ice Age, around 15,000 years ago. Rather than sail, they were able to walk across a land bridge at the Bering Strait.

Columbus wasn't even the first European to discover America. The Icelandic explorer Leifur Eiriksson landed in what is Newfoundland, Canada today, half a millennium before Columbus. While

much of Eiriksson's legend is based on the Icelandic Sagas, hard evidence also exists. In 1960, an international team of archaeologists excavated artefacts of Viking origin, dating from around 1000 CE, and the remains of the Norse village are now part of a UNESCO World Heritage site. Though Columbus Day is a national holiday in the United States, the explorer never actually set foot in continental North America. He landed on various Caribbean islands and explored Central and South American coasts.

WHAT WAS THE FIRST CAPITAL OF THE USA?
New York City



Originally designed for defence, The Great Wall of China was used to impose trade taxes and control emigration

This day in history 3 April: All About History 11 goes on sale, but what else

1043

Edward the Confessor is crowned

One of the last Anglo-Saxon kings of England, whose coronation is commemorated as the opening scene of the Bayeux Tapestry.



1868

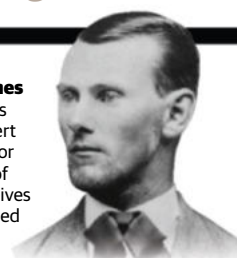
Surf's up

The largest wave ever ridden by a surfer is purported to be 16m (50ft) high. The wave hits Minole, Hawaii. A native surfer, Holua, rides the wave to save himself from being crushed by it.

1882

Assassination of Jesse James

Wild West outlaw Jesse James is killed by fellow bandit Robert Ford. Ford is later pardoned for the murder by the governor of Missouri, though he only receives a small portion of the publicised \$5,000 reward.



1888

Whitechapel murders

Emma Smith is the first of 11 women brutally killed in unsolved murders in the Whitechapel district of London between 1888 and 1891. Five of the deaths are attributed to Jack the Ripper, though Smith isn't one of them.

Did slaves build the Egyptian pyramids?

Amy Hall, London

Contrary to the prevailing legend that the building of the pyramids in Egypt was done by hordes of slaves under cracking of whips, new evidence has reinforced the theory that they were in fact built by free, skilled Egyptian workers.

The finding of tombs near the Khufu and Khafre pyramids where workers were buried has further strengthened this theory, as slaves would surely not have been buried in tombs next to their kings'.

Records and evidence at the site indicate that the approximately 10,000 workers ate 21 cattle and 23 sheep that were sent every day from farms surrounding the construction site.

Workers were employed for three-month stints, often between harvests, either to honour their pharaoh or simply for some extra income.

What was the decisive battle of the Hundred Years' War?

Joan Franks, Sunderland

The most decisive battle of the war was the Siege of Orleans in 1428. The English thought if the city fell, Henry V's dream of conquering all of France would be realised. However, the siege collapsed after nine days when Joan of Arc arrived with relief troops. The victory by the teenage girl who claimed to hear voices from God, inspired the previously dispirited French forces and shocked the convictions of the

English. The tide turned in France's favour. The Hundred Years' War was fought between France and England over control of the French throne between 1337 and 1453. Early success favoured the English, but by 1453, all English territories in France except Calais were lost and King Philip VI reigned supreme in Paris.



Did Joan of Arc win the Hundred Years' War for France?

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Really loved @AboutHistoryMag this month. As always loved the What if. And the Kamikaze piece. I love subscribing. It's such a nice treat.
@PipzJay

What was Checkpoint Charlie?

Sarah Ashcroft, Nottingham

It was the main border crossing for diplomats, journalists and foreign visitors to enter Soviet-controlled East Berlin from West Berlin. Part of the Berlin Wall, visitors were vetted by guards before entering and were only allowed to enter East Berlin on a one-day visa. In October 1961, a standoff took place at the checkpoint between US and Soviet forces. Though some feared the beginning of World War III, it ended peacefully after six days.



Checkpoint Charlie was symbolic of the division between East and West Berlin during the Cold War

Did Marie Antoinette really say "let them eat cake?" Find out at...
historyanswers.co.uk

happened on this day in history?

1895 The trial of Oscar Wilde Playwright Oscar Wilde sues the Marquess of Queensberry for accusing him of being homosexual. However, after his private life is exposed by the defence, Wilde was imprisoned on criminal charges of sodomy.	1922 Stalin's rise to power Joseph Stalin becomes the first general secretary of the Communist Party of the Soviet Union. He uses the office to create a strong power base for himself, eventually becoming leader of the USSR.	1948 Marshall Plan signed President Harry S Truman authorises \$5 billion in aid for 16 European countries, including Great Britain, France and West Germany, to help them rebuild after the devastation of World War II.	1981 The Osborne 1 is unveiled Considered to be the first truly portable computer, the Osborne 1 is unveiled at the West Coast Computer Faire. However, due to increasing competition it soon becomes obsolete.
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HISTORY HOLLYWOOD

Fact versus fiction on the silver screen

NIXON

Director: Oliver Stone **Starring:** Anthony Hopkins, Joan Allen **Country of origin:** USA **Year made:** 1995

A critical success but a box-office failure, is Oliver Stone's historical interpretation of Richard Nixon as scandalous as Watergate?



What they got right

Hopkins' Nixon boasts that if he'd been president instead of Kennedy, "they never would have killed me." This isn't far from the real Nixon's memoirs: "I did not think that if I had won in 1960 it would have been I rather than he riding through Dealey Plaza in Dallas at that time."

WHAT THEY GOT WRONG...

01 Stone has Nixon visit a sinister meeting with Texas billionaires. They buy the young Navy lawyer's services with booze and women, but the actual 1946 meeting, between Nixon and Californian businessmen, was very much open and legitimate.



02 A young Richard Nixon pledges to be his mother's "humble dog" in the film, which is shown to please her greatly. However, in reality Nixon actually said this to his grandmother and he did so in a written letter to her, not in person.



03 Many of the film's historical inaccuracies come in the form of skewed portrayals of some of its characters. Henry Kissinger, Nixon's national security advisor who, despite winning the Nobel Prize for Peace, is shown to be a conniving bootlicker in Stone's film.



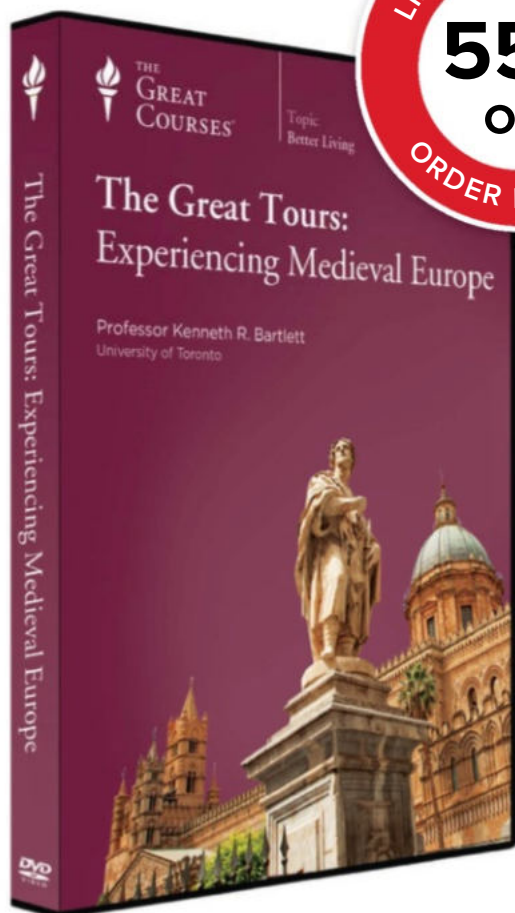
04 After the assassination of President John F. Kennedy, Nixon says that British Prime Minister Harold Macmillan will attend the funeral. However, Macmillan had already been succeeded by Alec Douglas-Home over a month previously.



05 Nixon is portrayed as a weak orator with little confidence from his debate with Kennedy in 1960 to his Watergate swan song. In fact, his skill as a public speaker was one of the main reasons why he became the head of the White House in the first place.



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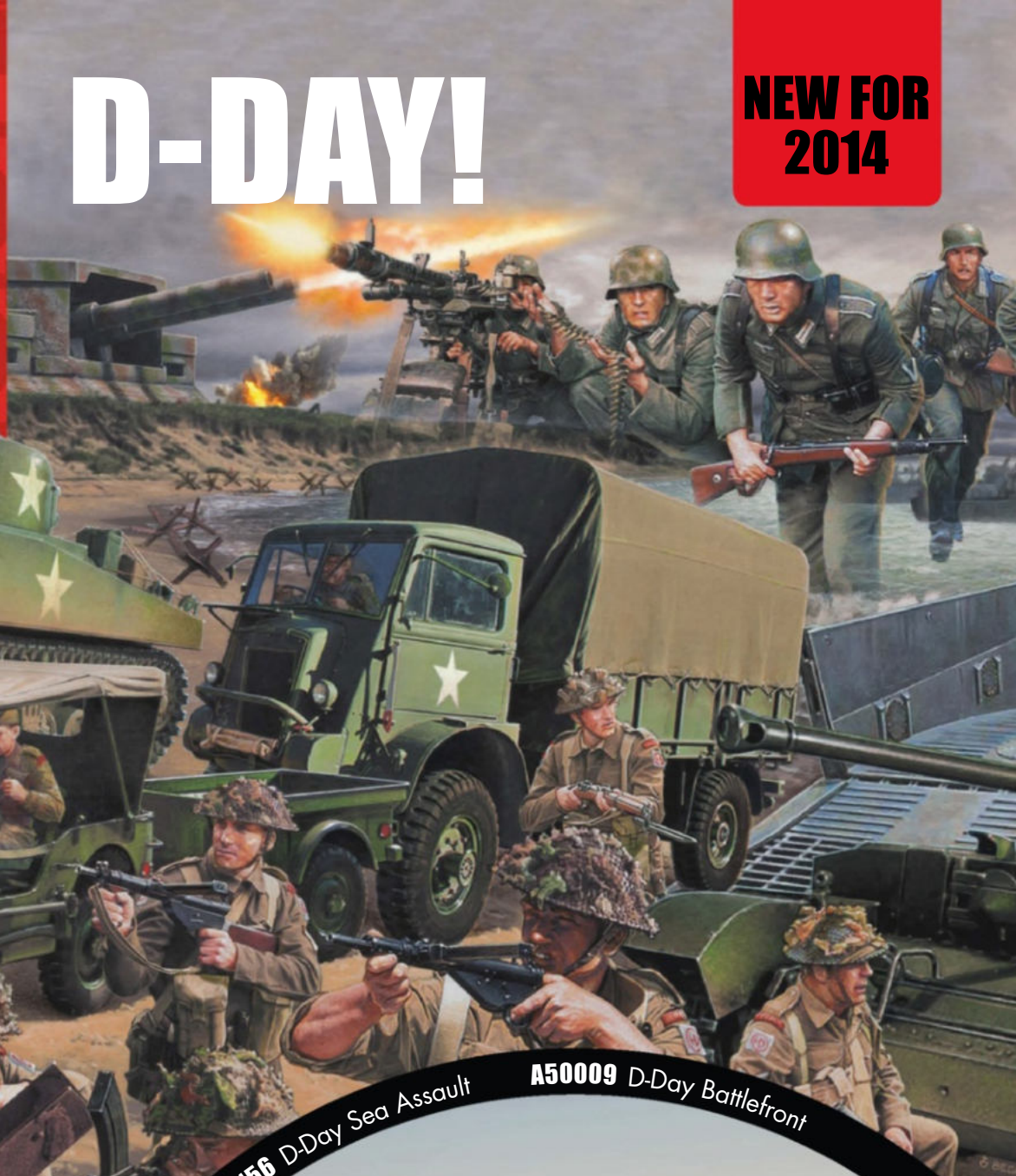
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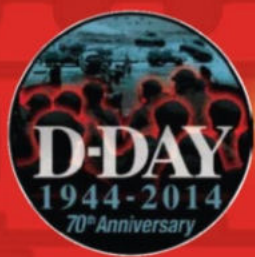


D-DAY!

**NEW FOR
2014**



**A50162 1:72
D-Day Operation
Overlord**



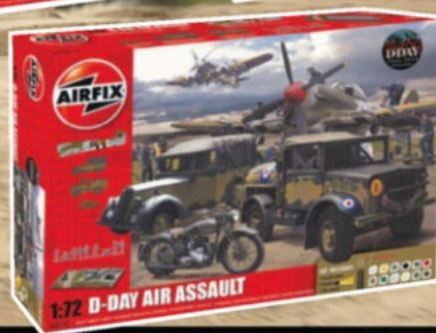
These D-Day gift sets will be available in June to mark the 70th anniversary of D-Day. These four sets illustrate different stages during Operation Overlord and all of these come with vac-form bases to create the perfect diorama.

All the models included in each of these sets are also available to purchase individually.

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